FEDERAL - STATE - PRIVATE

COOPERATIVE

SNOW SURVEY and WATER SUPPLY FORECASTS for OREGON

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE

and

OREGON AGRICULTURAL EXPERIMENT STATION

and

STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above in cooperation with other Federal, State and private organizations.

AS OF

FEB. 1, 1961

USDA-SCS-PORTLAND, OREG. 1990

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Cooperative Snow Survey and Water Supply Forecast Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Fortunately, most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from fore-knowledge of the runoff.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, about 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

By relating snow survey measurements taken over a period of years to spring-summer runoff during the same period, relationships have been developed which make it possible to forecast seasonal runoff several months in advance of occurrence. In order to make a forecast, once a forecast relationship has been developed, the maximum snow water content at previously selected key snow courses is usually entered in the forecast relationship. More accurate forecasts are often obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast relationships.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
Colorado and State of Utah	Monthly (Jan.-May)	Salt Lake City, Utah	Utah State Engineer and Other Agencies
Columbia	Monthly (Jan.-May)	Boise, Idaho	Idaho State Reclamation Engineer
Upper Missouri and State of Montana	Monthly (Feb.-May)	Bozeman, Montana	Mont. Agr. Exp. Station
West-Wide	Oct. 1, Apr. 1, May 1	Portland, Oregon	All Cooperators
STATES			
Alaska	Monthly (Mar.-May)	Palmer, Alaska	Alaska S.C.D.
Arizona	Semi-Monthly (Jan. 15 - Apr. 1)	Phoenix, Arizona	Salt R. Valley Water Users Assoc. Ariz. Agr. Exp. Station
Colorado and New Mexico	Monthly (Feb.-May)	Fort Collins, Colorado	Colo. Agr. Exp. Station Colo. State Engineer N. Mex. State Engineer
Idaho	Monthly (Feb.-May)	Boise, Idaho	Idaho State Reclamation Engineer
Nevada	Monthly (Feb.-Apr.)	Reno, Nevada	Nevada Dept. of Conservation and Natural Resources - Division of Water Resources
Oregon	Monthly (Jan.-May)	Portland, Oregon	Ore. Agr. Exp. Station Oregon State Engineer
Washington	Monthly (Feb.-May)	Spokane, Washington	Wn. State Dept. of Conservation
Wyoming	Monthly (Feb.-June)	Casper, Wyoming	Wyoming State Engineer

Copies of these various reports may be secured from: Head, Water Supply Forecasting Section
Soil Conservation Service
209 S. W. Fifth Ave., Portland 4, Oregon

PUBLISHED BY OTHER AGENCIES

REPORTS	ISSUED	AGENCY
British Columbia	Monthly (Feb.-June)	Comptroller, Water Rights Br., Dept. of Lands and Forests, Parliament Blog., Victoria, B.C., Canada
California	Monthly (Feb.-May)	Calif. Dept. of Water Resources, Sacramento, Calif.

FEDERAL - STATE - PRIVATE

COOPERATIVE

SNOW SURVEY and WATER SUPPLY FORECASTS for OREGON

ISSUED

FEBRUARY 8, 1961

Report prepared by

W. T. FROST, Snow Survey Supervisor

and

BOB L. WHALEY, Assistant Snow Survey Supervisor

SOIL CONSERVATION SERVICE
209 S.W. 5TH AVE., PORTLAND 4, OREGON

Issued by

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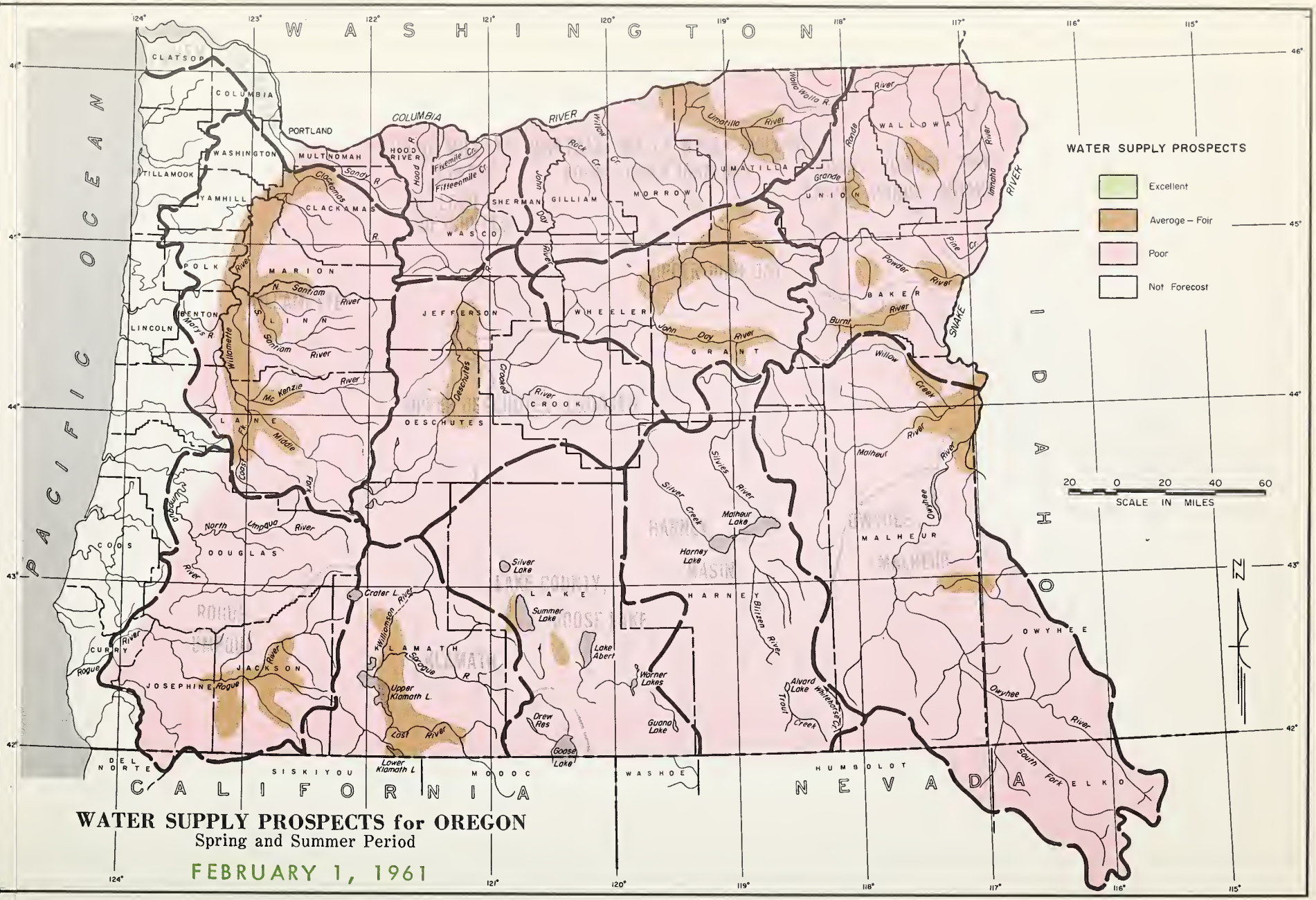
EXPERIMENT STATION

LEWIS A. STANLEY
STATE ENGINEER
STATE OF OREGON

TABLE OF CONTENTS

USDA SCS PORTLAND, OREG 1959 M-1877



WATER SUPPLY PROSPECTS for OREGON

Spring and Summer Period

FEBRUARY 1, 1961

WATER SUPPLY OUTLOOK for OREGON

FEBRUARY 1, 1961

Oregon's 1961 water supply outlook for the spring and summer months has not improved during the last month and now ranges from only "fair" to "very poor". Reservoir storage is less than last year and only about two-thirds of average. Watershed soils under the snowpack are fairly well wetted but only at higher elevations. Streamflow forecasts range from 23 percent on the Owyhee to 87 percent of average on the Lostine River in the Wallowas.

SNOW COVER:

Water content of the mountain snowpack in Oregon is extremely low this year and now averages only 46 percent of the 1943-57 February 1 average. The Willamette watershed has the poorest snow cover and is only 27 percent of average.

Usually about two-thirds of the winter's total snowpack is on the ground by February 1. This year, only 30 percent of a normal year's total was accounted for in recent snow surveys. Future storms will have to deposit double the normal amounts of snow to make up this deficit.

RESERVOIR STORAGE:

Stored water in twenty important irrigation reservoirs over the state averages about the same as last year but is still only 65 percent of the 1943-57 comparison period.

PRECIPITATION:

January precipitation [1] in Oregon varied from about 1 percent of normal at John Day to 78 percent at Eugene. Precipitation over most of the state east of the Cascade Mountains was only 50 percent of average or less, while west of the Cascades, most stations were in the 70 percent class during January. Precipitation since October 1st has averaged 75 percent at 15 selected stations scattered over the state.

STREAMFLOW:

The streamflow outlook for the coming irrigation season (April through September) is poorer than at this time last year in most areas of the state. Forecasts vary from 23 percent on the Owyhee to 87 percent on the Lostine in the Wallowas. Most critical situations are the streams flowing into Ochoco, Drew and Owyhee Reservoirs and for Silvies River - predictions for these are below 40 percent of average.

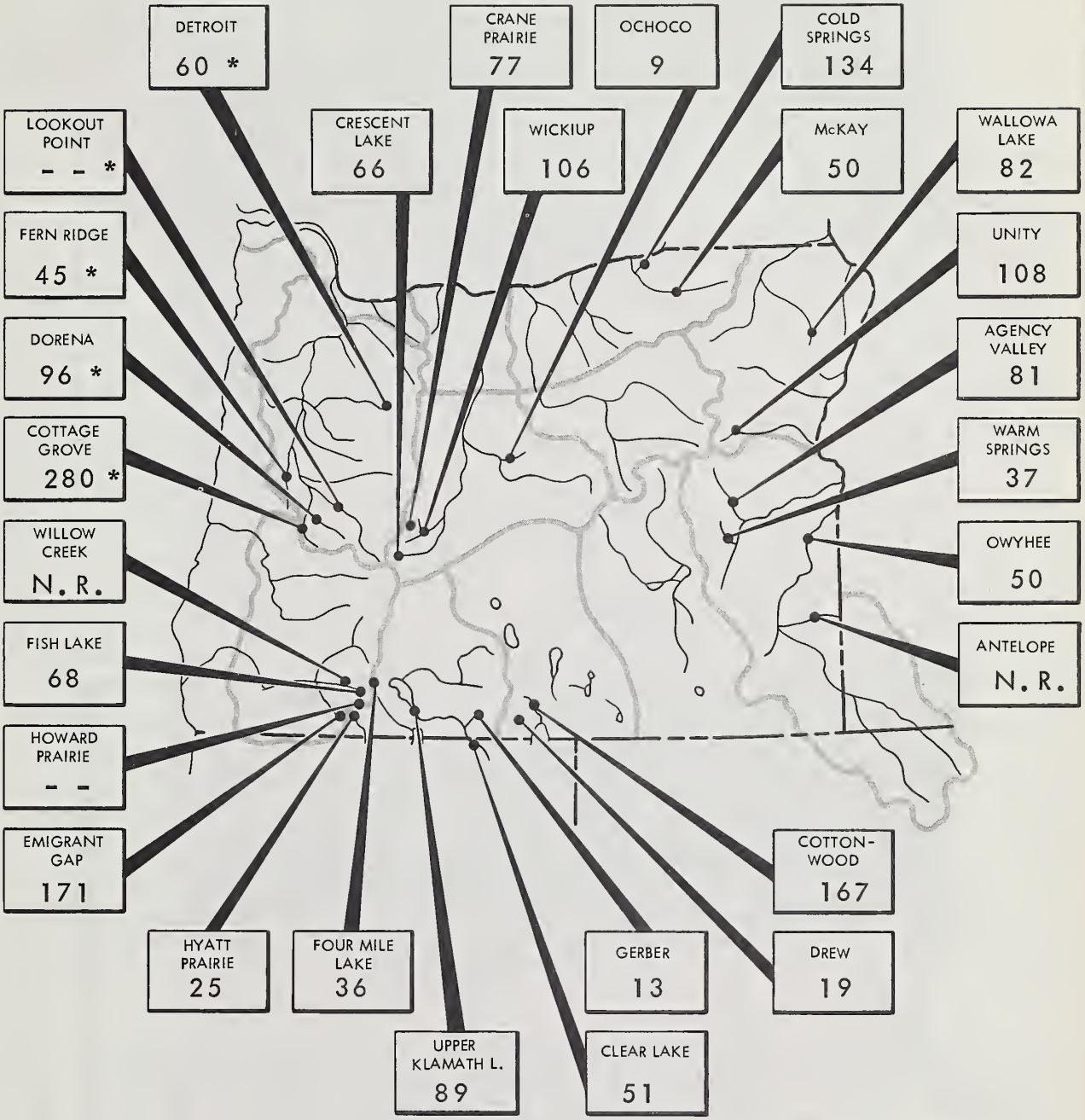
Streamflow [2] has been below normal since October 1 and ranges from 51 percent of average on the Umpqua to 88 percent on the Deschutes.

January streamflow varied from 96 percent on the Hood River to 24 percent on the Umpqua.

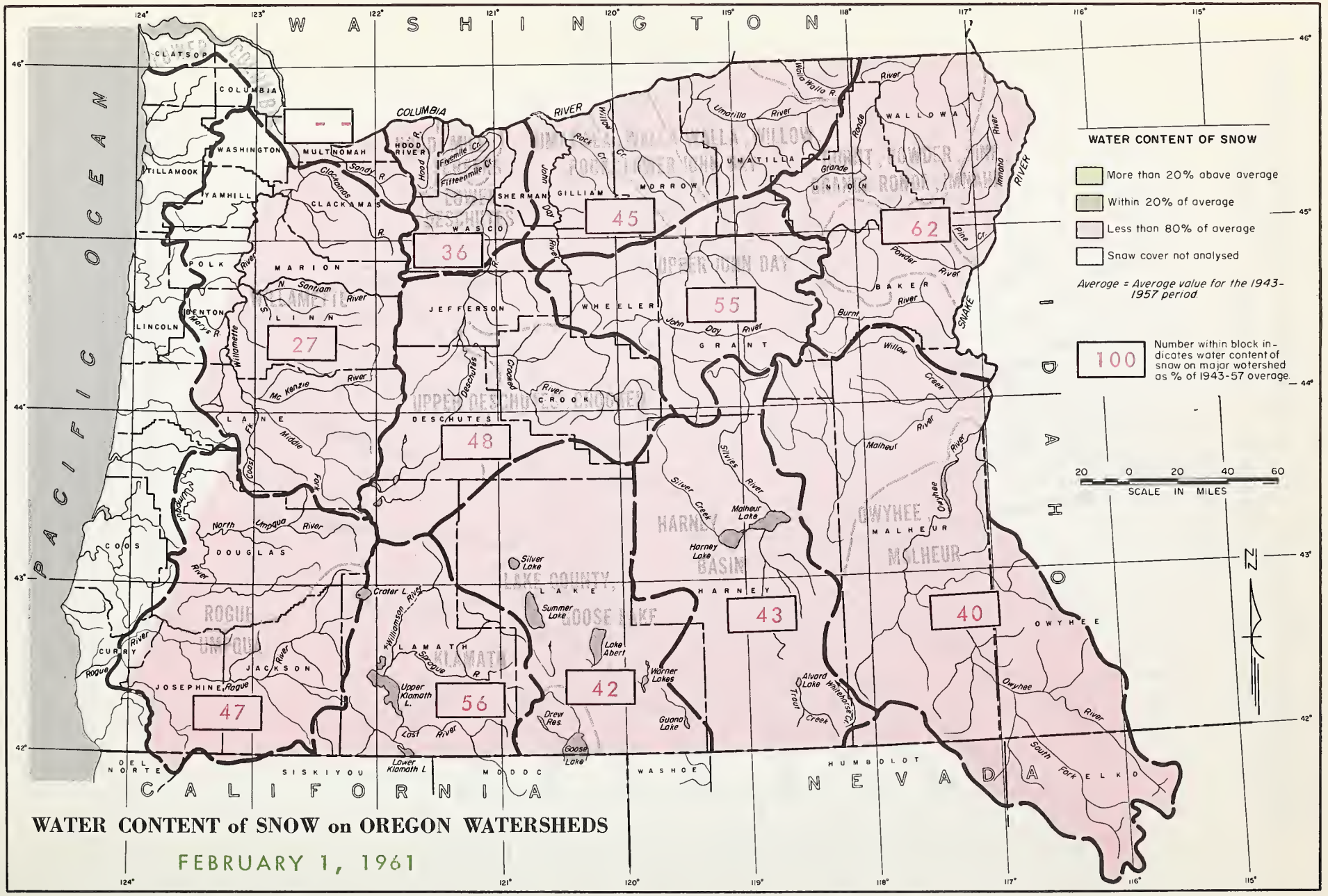
(1) From preliminary data furnished by U.S. Weather Bureau, Portland, Oregon.
(2) From preliminary data furnished by U.S. Geological Survey, Portland, Oregon.

STORAGE STATUS of OREGON RESERVOIRS
as percent of 1943-57, 15 year average

FEBRUARY 1, 1961



**- Multiple purpose reservoir - space reserved primarily for flood runoff.*
N.R. - No report.



WATER CONTENT of SNOW on OREGON WATERSHEDS

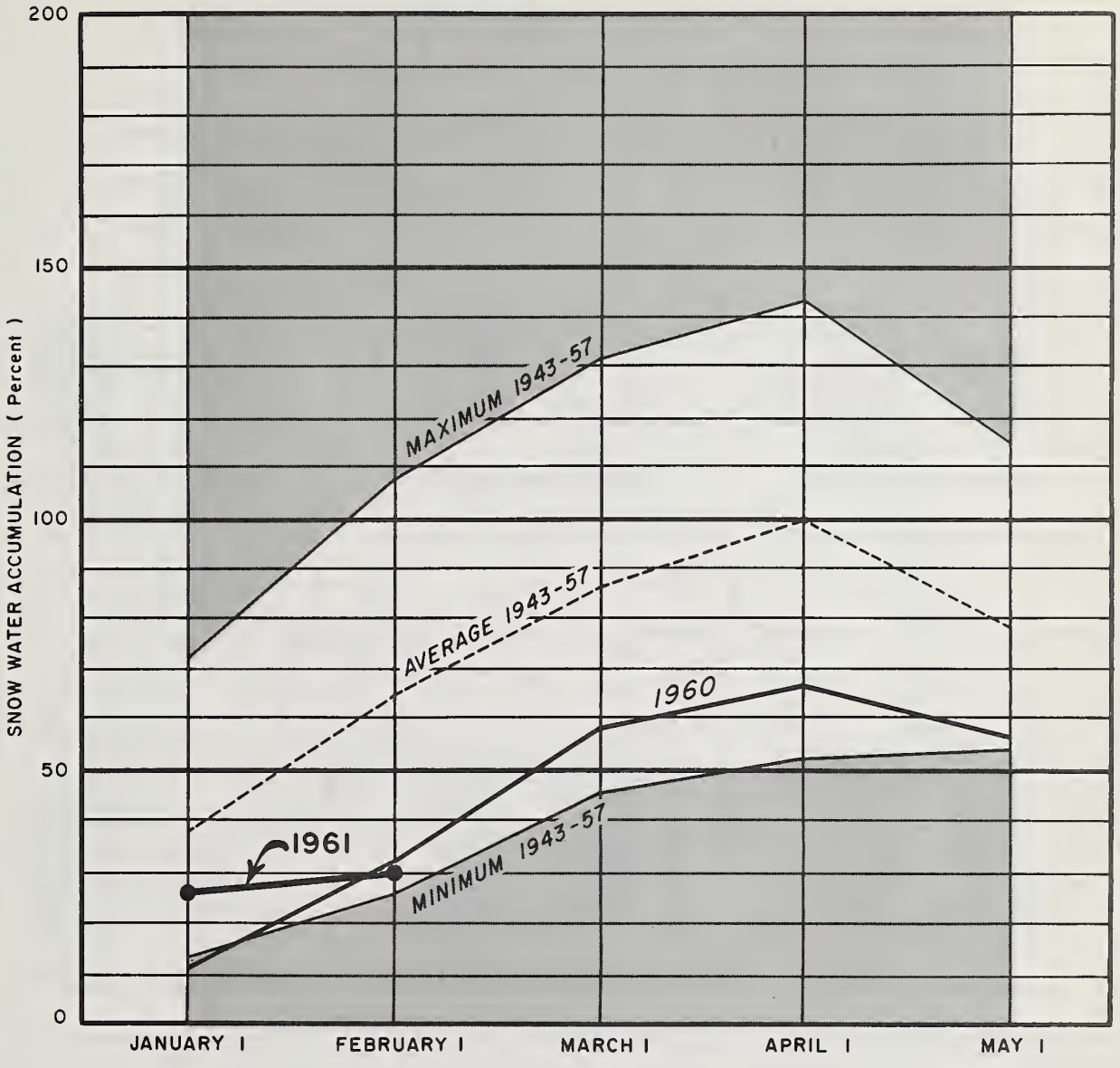
FEBRUARY 1, 1961

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

7-0-19102-2-L

SNOW WATER ACCUMULATION in OREGON

FEBRUARY 1, 1961

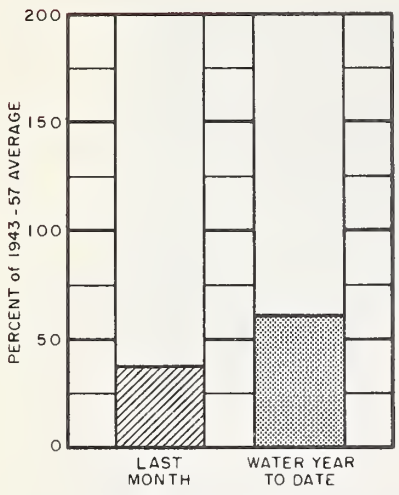


In an average winter about two-thirds of the mountain snowpack will be "on the ground" by February 1st. The snow accumulation this year, state-wide, is only 30 percent of a normal winter "snow crop".

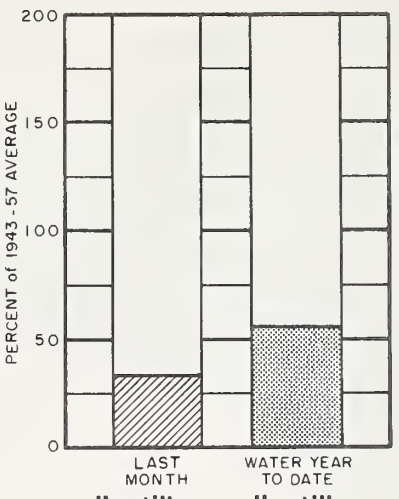
Future winter storms will have to "deposit" double the normal amount of snow in Oregon's "snow bank reservoir" to offset the present 35 percent "deficit" in the snow water accumulation account.

CURRENT OREGON STREAMFLOW

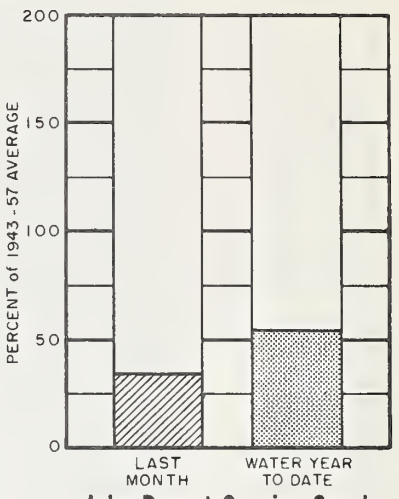
FEBRUARY 1, 1961



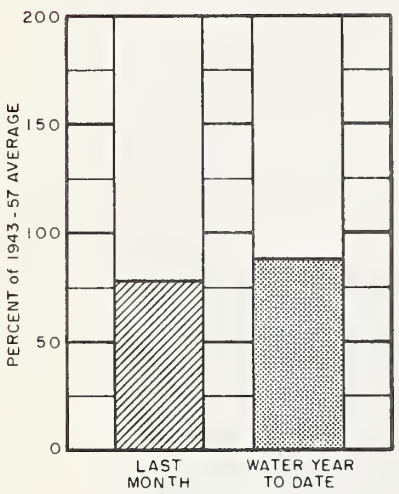
Owyhee Res. net inflow



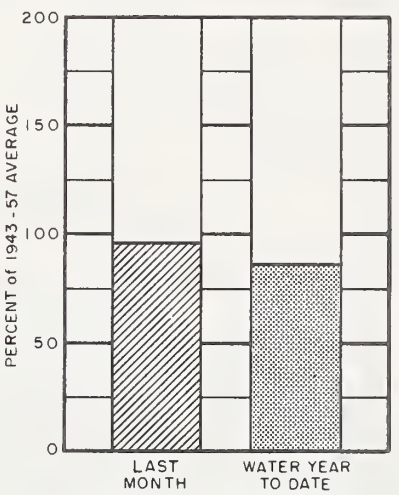
Umatilla near Umatilla



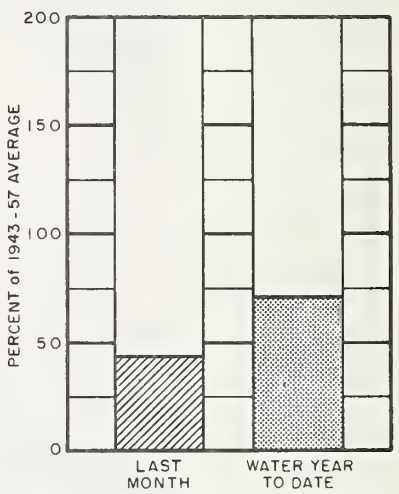
John Day at Service Creek



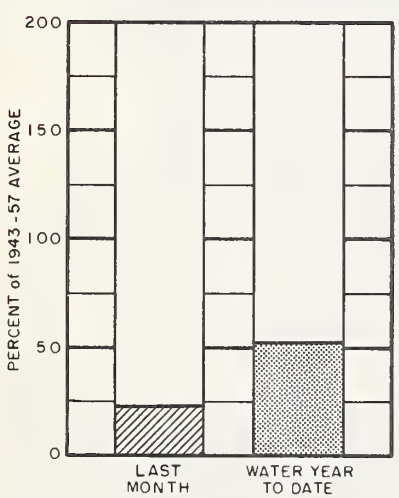
Deschutes at Moody



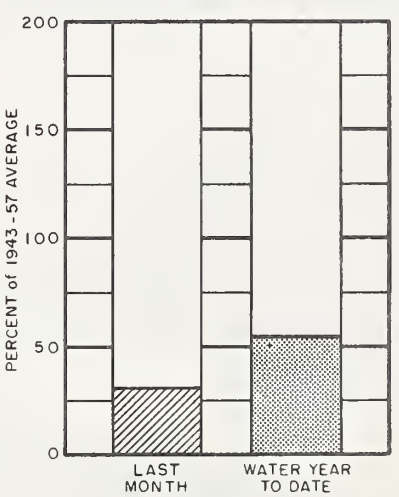
Hood and conduit near Hood River



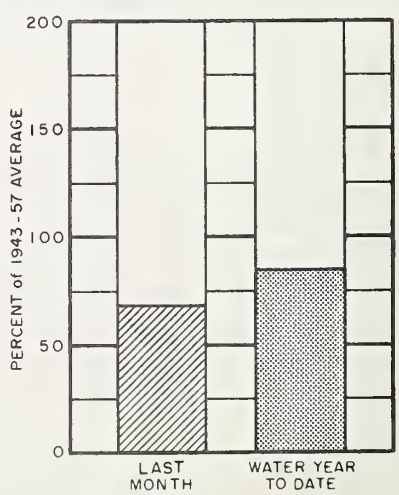
Mid. Fk. Willamette below No. Fk.



Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow

Data furnished by U.S. Geological Survey; The California Oregon Power Co.; and North and South Boards of Control Owyhee Project.

VALLEY PRECIPITATION in OREGON [a]

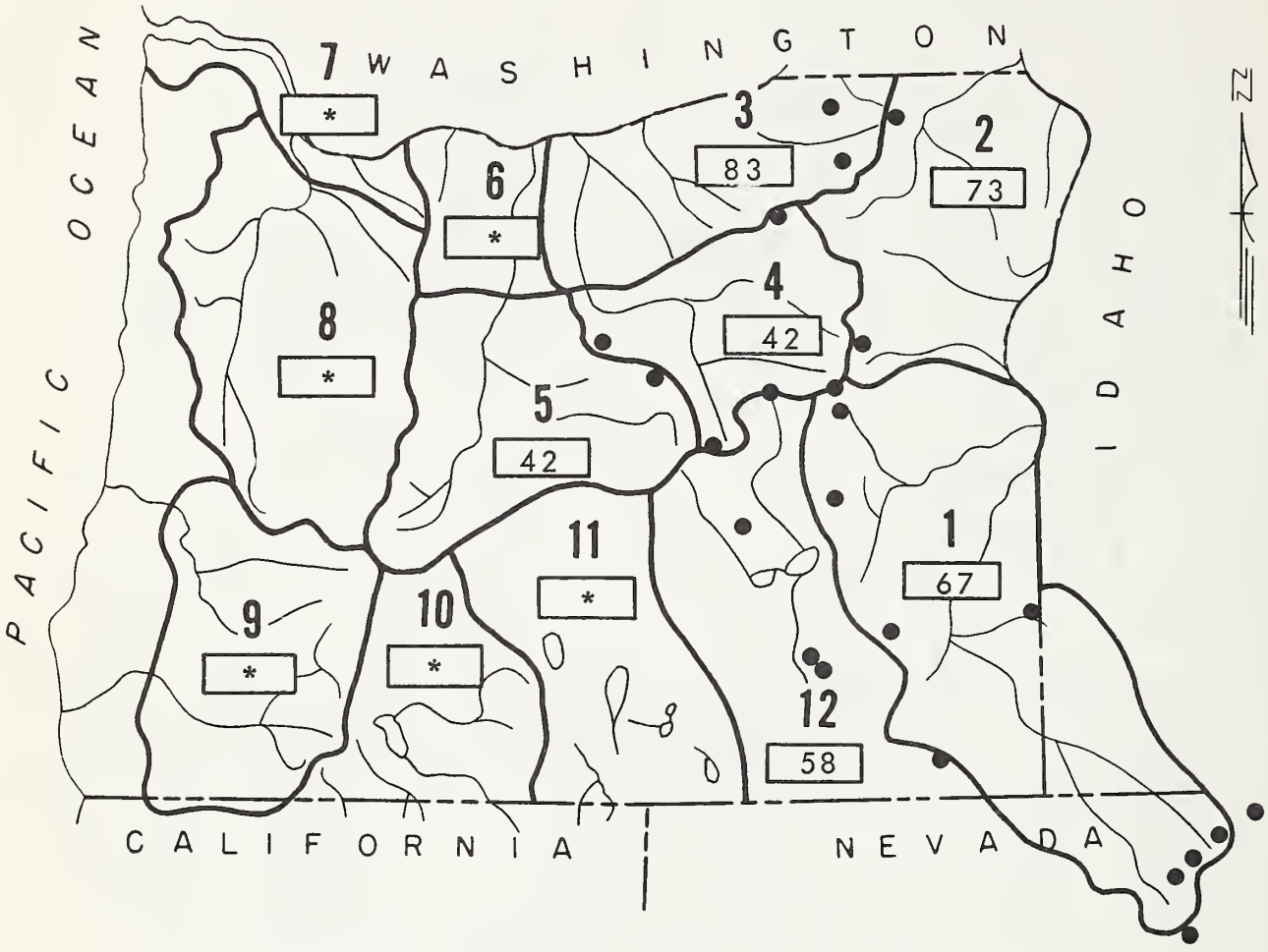
FEBRUARY 1, 1961

PRECIPITATION as PERCENT of the 1943-57 AVERAGE					
STATION	LAST MONTH	WATER YEAR TO DATE [b]	STATION	LAST MONTH	WATER YEAR TO DATE [b]
Baker KBKR	Report	delayed	Lakeview	42	80
Bend	11	71	Medford Apt.	33	65
Burns	46	68	Nyssa	52	78
Enterprise	39	68	Pendleton Apt.	32	68
Eugene Apt.	78	90	Portland Apt.	76	83
Heppner	53	75	Roseburg Apt.	37	70
John Day	1	71	Salem Apt.	70	82
Klamath Falls Apt.	28	73	The Dalles	58	83

(a) Preliminary data furnished by the U.S. Weather Bureau. (b) Oct. 1 to date. (c) Report delayed.

MOUNTAIN SOIL MOISTURE in OREGON
as percent of available capacity

FEBRUARY 1, 1961



● Soil Moisture Station

**Moisture studies not yet developed in these areas.*

WATER SUPPLY OUTLOOK
OWYHEE, MALHEUR WATERSHEDS
OREGON

as of
FEBRUARY 1, 1961

U.S.DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE, OREGON AGRICULTURAL EXPERIMENT STATION and OREGON STATE ENGINEER

GENERAL OUTLOOK - The water supply outlook for 1961 irrigation in Malheur County has not improved and has changed for the worse since the prediction of "improved but skimpy" supplies was made one month ago. Lack of normal carry-over storage water in local reservoirs has a further dimming effect on the outlook.

SNOW COVER - Water content of the mountain snowpack is exceptionally low - 40 percent of the average amount (15 years 1943-57) usually present on the upper watersheds by this date, but only two-thirds as much as measured a year ago.

This year's snow cover is only slightly better than the extremely "short" snowpack measured at this date in 1959 and 1944. With a "deficit" this large, it is highly unlikely that remaining winter storms will deposit enough moisture to "balance the budget in the snow bank."

SOIL-MOISTURE - The soil-mantle of Malheur County watersheds received a good wetting from heavy rains in November and some small amounts of moisture have since been added by recent storms. However, the total moisture in the soil profile (top 3 or 4 feet) is only slightly wetter than a year ago and is concentrated in the upper two feet. Soil-moisture averages 67 percent of capacity at the nine stations measured - last year it averaged 63 percent.

RESERVOIR STORAGE - Total water stored in Agency Valley and Warmsprings Reservoirs on Malheur River is 83 percent of last year at this date and 46 percent of the 1943-57 average. This makes 42,000 acre feet of stored water available to the two irrigation districts.

Storage in Owyhee Reservoir is up to 209,650 acre feet. This is 14,000 acre feet less than last year and only 50 percent of the average.

STREAMFLOW - Flow of the Owyhee River has averaged only 60 percent of normal since October 1st and other streams in Malheur County have been similarly below normal in flow.

Streamflow forecasts for the April-September period are much below average. Flow of the Owyhee is predicted to be about 23 percent of the average (1943-57) - a flow only slightly greater than that received in 1959 and 1954.

Forecasts of flow on the Malheur River for the irrigation season have been set at 56 percent average for the main river above Warmsprings Reservoir and 62 percent average for the North Fork.

Report prepared by
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U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Boulder Creek	Fair	Poor
Bully Creek	Fair	Poor
Cow Creek	Fair	Poor
Jordan Creek	Fair	Poor
Jordan Valley Irrig. Dist.	Fair	Fair
McDermitt Creek	Fair	Poor
Oregon Canyon Creek	Fair	Poor
Owyhee Project	Fair	Fair
Sucker Creek	Fair	Poor
Ten Mile Creek	Poor	Poor
Vale, Oregon Irrig. Dist.	Fair	Fair
Warmsprings Irrig. Dist.	Fair	Fair
Willow Creek	Fair	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Agency Valley	60.0	18.7	19.7	27.3
Antelope	55.0	*f*	2.1	5.0
Owyhee	715.0	209.6	223.8	416.6
Warmsprings	191.0	23.7	31.6	64.8

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.)

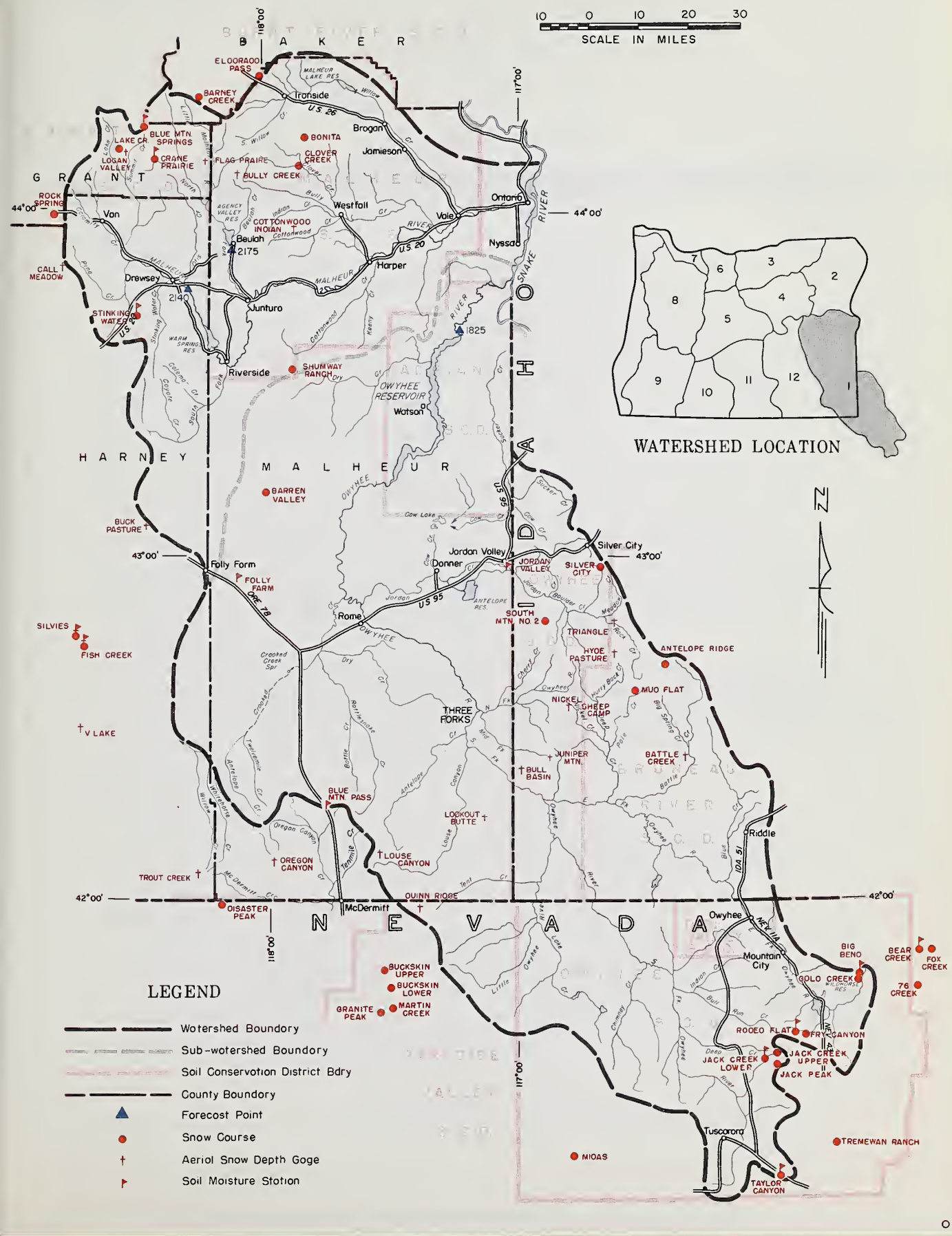
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
2140	Malheur near Drewsey	45	April-Sept.	81	56
2175	Malheur, North Fork at Beulah [d]	40	April-Sept.	64	62
1825	Owyhee Reservoir net Inflow [g]	100	April-Sept.	430	23
		c	April-July	412	
		160	March-July	524	31

AVAILABLE SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Bear Creek (Nev.)	7800	48	5.6	*c*			
Big Bend (Nev.)	6700	48	9.6	1-31-61	7.4	8.6 [j]	9.1
Blue Mountain Springs	5900	42	12.0	1-26-61	2.8	- -	7.8 [i]
Folly Farm	4450	36	8.3	12-15-60	5.5 [i]	5.3 [i]	4.6 [i]
Jack Creek, Lower (Nev.)	6800	48	4.9	1-30-61	4.5	3.3 [i]	4.6
Jordan Valley	4250	48	9.8	12-15-60	4.7	4.9	6.3
Rodeo Flat (Nev.)	6800	42	6.0	1-31-61	6.0	6.0 [j]	6.0
Stinking Water Summit	4800	48	11.7	12-15-60	11.0 [i]	10.6 [i]	11.1
Taylor Canyon (Nev.)	6200	48	9.7	2-2-61	6.1	6.2 [j]	6.7

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) USBR records of inflow. (h) Not surveyed. (i) Nearest current data.

OWYHEE, MALHEUR WATERSHEDS



OR-1c

Owyhee, Malheur Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD		
					WATER CONTENT (Inches)		
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE	YEARS IN AVERAGE [b]
Antelope Ridge	5900	1/30	6	1.6	3.2	- -	0
Barney Creek	5950	[c]					
Battle Creek [e]	5700	Report	delayed				
Bear Creek	7800	2/1	24	6.6	7.5	- -	3
Big Bend	6700	1/31	15	3.0	3.8	8.4	10
Blue Mountain Spring	5900	1/26	23	6.6	6.9	11.0	14
Buckskin, Lower	6700	[c]					
Buckskin, Upper	7200	[c]					
Bull Basin [e]	5600	Report	delayed				
Bully Creek [e]	5300	Report	delayed				
Call Meadows [e]	5340	Report	delayed				
Clover Creek	4100	[h]					
Cottonwood-Indian [e]	4320	Report	delayed				
Crane Prairie	5375	[c]					
Disaster Peak	6500	1/25	24	7.3	- -	- -	0
Eldorado Pass	4600	1/27	0	0.0	2.9	- -	2
Fish Creek [e]	7900	1/25	30	8.4	8.3	- -	0
Flag Prairie [e]	4750	Report	delayed				
Fox Creek	6800	[c]					
Fry Canyon	6700	1/31	12	3.2	4.2	6.6	8
Gold Creek	6600	1/31	8	1.6	3.1	4.8	9
Granite Peak	7800	1/26	12	3.6	5.8	- -	2
Hyde Pasture [e]	5800	Report	delayed				
Jack Creek, Lower	6800	1/30	4	1.0	3.1	- -	2
Jack Creek, Upper	7250	1/30	12	3.0	5.8	- -	2
Jack Peak	8420	1/30	37	14.2	- -	- -	0
Juniper Mountain [e] (Red Canyon)	6500	Report	delayed				
Lake Creek	5120	1/27	16	3.2	6.7	- -	2
Logan Valley [e]	5100	Report	delayed				
Lookout Butte [e]	5650	Report	delayed				
Louse Canyon [e]	6440	Report	delayed				
Martin Creek	6700	1/26	16	4.2	4.9	- -	2
Midas	7200	[c]					
Mud Flat	5500	1/30	12	3.0	2.6	- -	0
Oregon Canyon [e]	6950	Report	delayed				
Quinn Ridge [e]	6300	Report	delayed				
Riddle Creek [e] (Buck Pasture)	5700	Report	delayed				
Rock Spring	5100	1/27	8	1.2	3.7	4.7	15
Rodeo Flat	6800	1/31	10	2.7	4.0	6.1	8
Silver City	6400	1/29	18	4.5	8.4	11.8	7
Silvies [e]	6900	1/25	11	3.1	6.0	- -	0
South Mountain No. 2	6340	1/28	14	3.5	5.1	8.8	15
Stinking Water	4800	1/27	T	T	3.7	3.5	14
Taylor Canyon	6200	2/2	5	1.0	3.9	- -	2
Tremewan Ranch	5700	1/31	T	T	1.8	- -	3
Triangle [e]	5150	Report	delayed				
Trout Creek [e]	7800	Report	delayed				
76 Creek	7100	1/27	20	4.8	4.0	- -	3
"V" Lake [e]	6600	1/24	12	3.4	2.3	- -	0

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS
OREGON

as of

FEBRUARY 1, 1961

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE, OREGON AGRICULTURAL EXPERIMENT STATION and OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1961 irrigation water supply outlook for northeastern Oregon is very similar to that of last year but poorer than one month ago.

The outlook for Catherine Creek, the Wallowa, and Imnaha Rivers and tributaries is expected to be between 84 and 87 percent of average. On the Grande Ronde, Powder and Burnt Rivers, the outlook is for flows in the 60 and 70 percent range. Snow cover has fallen farther below the average during January while raising soil moisture on higher watersheds only slightly.

SNOW COVER

Snow cover in this area is only 62 percent of the 1943-57 average although about one-fourth better than last year at this time.

By February 1 the snowpack has usually reached about the two-thirds point of total snow accumulation. This year current snow surveys indicate that only the 40 percent level was reached on February 1. This is 6 percent better than last year at this time but still 26 percent below the average.

SOIL-MOISTURE

Soil moisture was increased slightly at higher elevations during January by warmer than normal temperatures causing snow melt on the watersheds. This condition is not true of the lower valleys and more exposed areas since very little precipitation fell during January and these areas had little if any snow to melt and penetrate the soil surface.

RESERVOIR STORAGE

Storage in Unity Reservoir is a little better than the 1943-57 average for February 1, and is now 153 percent of last year at this time with 7,800 acre feet in storage. Wallowa Lake has 13,100 acre feet in storage for 82 percent of average and a little less than half as much as last year on February 1.

STREAMFLOW

Streamflow forecasts vary from 87 percent of average in the Wallowas, to 63 percent on the Grande Ronde. Wallowa Mountain streams are expected to flow nearer average than the other streams in this area. Streamflow forecasts for the Grande Ronde, Powder, and Burnt Rivers are 63, 79 and 78 percent of average respectively for the April-September period.

Report prepared by
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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Alder Slope	Fair	Fair
Baker Valley	Fair	Fair
Big Creek	Fair	Poor
Clover Creek (near North Powder)	Fair	Poor
Cove	Fair	Fair
Durkee	Fair	Poor
Eagle Valley	Fair	Fair
Elgin	Fair	Poor
Enterprise - Joseph	Average	Fair
Hereford - Bridgeport	Average	Fair
Imnaha River	Average	Fair
LaGrande - Island City	Fair	Poor
Lostine - Wallowa	Average	Fair
North Powder River - Wolf Creek	Fair	Poor
Pine Valley	Fair	Fair
Powder River- Elk Creek	Fair	Poor
Summerville	Fair	Poor
Sumpter Valley	Fair	Poor
Union - Hot Lake	Average	Fair
Unity	Fair	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943 - 57 AVERAGE
Unity	25.2	7.8	5.1	7.2
Wallowa Lake	37.5	13.1	28.4	15.9

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.)

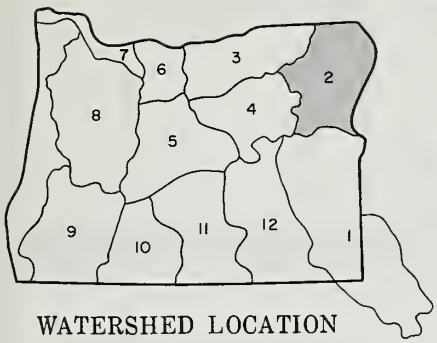
FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
3305	Bear near Wallowa	64	April-Sept.	74	86
2730	Burnt near Hereford [d]	35	April-Sept.	45	78
3200	Catherine near Union	61	April-Sept.	73	84
3190	Grande Ronde at LaGrande	128	April-Sept.	202	63
3295	Hurricane near Joseph	41	April-Sept.	49	84
2920	Imnaha at Imnaha	265	April-Sept.	314	84
3300	Lostine near Lostine	116	April-Sept.	133	87
2755	Powder near Baker	52	April-Sept.	66	79
		50	April-July	65	77
3250	Wallowa East Fork near Joseph [d]	10.2	April-Sept.	12.1	84
		8.2	April-July	9.7	85

AVAILABLE SOIL MOISTURE

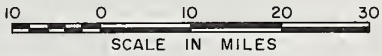
STATION NAME	STATION ELEVATION	PROFILE (Inches) DEPTH	PROFILE (Inches) AVAILABLE CAPACITY	SOIL MOISTURE (Inches) DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Blue Mountain Summit	5100	36	10.4	1-25-61	3.2	2.3	3.3 [i]
Emigrant Springs	3925	48	15.0	1-26-61	12.6	14.4 [i]	6.2 [i]
Tollgate	5070	48	17.8	1-26-61	15.6	16.4	17.2 [i]

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Water content partly estimated. (h) Not surveyed. (i) Nearest current data.

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS



WATERSHED LOCATION



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Soil Moisture Station
- Aeriol Snow Depth Gage

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD		
					WATER CONTENT (Inches)		
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE	YEARS IN AVERAGE[b]
Aneroid Lake No. 1	7480	1/28	50	19.2	10.6	24.4	15
Aneroid Lake No. 2	7000	1/27	40	13.6	7.9	19.2	15
Anthony Lake	7125	1/24	40	12.2	8.4	21.1	13
Bald Mountain[e] (Oregon)	6700	2/1	50	18.0	12.3	- -	0
Barney Creek	5950	*c*					
Beaver Reservoir	5340	1/30	20	5.8	4.0	8.0	15
Blue Mountain Summit	5098	1/27	17	4.0	3.4	6.9	15
Bourne	5800	1/26	28	7.4	6.9	11.5	11
County Line	4800	1/31	10	2.9	2.9	4.6	7
Dooley Mountain	5430	1/27	15	3.4	4.5	6.6	15
Eilertson Meadows	5400	1/25	20	4.6	3.7	9.0	13
Eldorado Pass	4600	1/27	0	0.0	2.9	- -	2
Gold Center	5340	1/28	22	5.9	5.4	9.2	14
Goodrich Lake	6775	*c*					
Little Alps	6200	1/24	22	6.4	3.7	- -	0
Lucky Strike	5050	1/25	24	4.9	6.3	9.0	14
Meacham	4300	1/26	10	2.8	5.0	7.1	15
Moss Spring	5850	1/25	28	9.2	9.8	17.1	15
Schneider Meadows	5400	1/25	47	15.3	11.6	21.6	15
Schoolmarm	4775	1/31	8	2.7	2.8	4.0	7
Standley[e]	7400	1/23	46	17.5	- -	- -	0
Summit Springs	6000	*c*					
Taylor Green	5740	*c*					
Tipton	5100	1/27	22	5.2	3.9	8.2	12
Tollgate	5070	1/26	28	8.8	8.0	19.2	15

WATER SUPPLY OUTLOOK
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS
OREGON

as of
FEBRUARY 1, 1961

U.S.DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE, OREGON AGRICULTURAL EXPERIMENT STATION and OREGON STATE ENGINEER

GENERAL OUTLOOK - The water outlook for the 1961 irrigation season in Umatilla, Morrow and Gilliam Counties is "fair to poor" and is definitely poorer than at this date last year. Mountain snow cover has failed to grow but warm temperatures have made possible larger than normal inflow to reservoirs.

SNOW COVER - Water content of the mountain snowpack is only 45 percent of average and is 30 percent less than last year at this date. Low-elevation snow is conspicuously absent this year.

In a normal winter about two-thirds of the total winter's snowpack is on the ground by February 1st. This year, however, snow accumulation to date is only 36 percent of a normal winter's accumulation. Therefore, remaining winter storms will have to deposit double the amount of snow now on the watersheds if the area is to have average conditions of runoff.

SOIL-MOISTURE - The soil mantle (top 4 feet) on the mountain watersheds under the snowpack is now wet up to 83 percent of capacity. This condition is very favorable to runoff expected to come this spring.

RESERVOIR STORAGE - Warm temperatures have contributed to better than average inflow to both McKay and Cold Springs Reservoirs. Present storage at McKay is 17,000 acre feet or 50 percent of average. Storage in Cold Springs Reservoir is 38,000 acre feet or 134 percent of the usual figure for this date.

STREAMFLOW - Flow of the Umatilla near Umatilla* has averaged 56 percent of average since October 1st. The January flow dropped off to 33 percent of average.

Forecasts of streamflow for the April-September irrigation season are 67 percent of the 1943-57 average for the South Fork of the Walla Walla River, 73 percent average for the Umatilla at Pendleton, and 52 percent of average for McKay Creek.

McKay Reservoir peaked at 68,800 acre feet last year. It is doubtful that it will fill this year. Cold Springs has a good chance to fill.

The smaller streams, Birch, Butter, Willow, Rhea and Rock Creeks will have short flows and will produce perhaps sufficient water for only one good irrigation.

*Preliminary data furnished by U.S. Geological Survey, Portland, Oregon

Report prepared by
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209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Birch Creek	Fair	Poor
Butter Creek	Fair	Poor
Dry Creek	Fair	Poor
Dugger Creek	Fair	Poor
Johnson Creek	Fair	Poor
McKay Creek	Fair	Poor
Mill Creek	Fair	Poor
Mud Creek	Fair	Poor
Pine Creek	Fair	Poor
Rhea Creek	Fair	Poor
Rock Creek	Fair	Poor
Umatilla River (Cold Springs Res.)	Average	Fair
Umatilla River, Main	Fair	Poor
Umatilla River (McKay Res.)	Average	Fair
Walla Walla River, Little	Fair	Poor
Walla Walla River, Main	Fair	Poor
Walla Walla River, N. Fork	Fair	Poor
Walla Walla River, S. Fork	Fair	Poor
Willow Creek	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cold Springs	50.0	38.0	29.7	28.4
McKay	73.8	17.0	15.8	33.7

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
0225	McKay near Pilot Rock	16	April-Sept.	31	52
		16	April-July	31	52
0200	Umatilla near Gibbon	70	April-Sept.	96	73
0210	Umatilla at Pendleton	137	April-Sept.	187	73
		135	April-July	182	74
0100	Walla Walla, South Fork near Milton	51	April-Sept.	76	67
		42	April-July	62	68

AVAILABLE SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Athena-Weston	1700	48	11.8	1-26-61	9.6	6.9	4.2[g]
Battle Mountain Summit	4340	48	8.0	12-28-60	5.8	4.4	2.6
Emigrant Springs	3925	48	15.0	1-26-61	12.6	14.4[g]	6.2[g]
Tollgate	5070	48	17.8	1-26-61	15.6	16.4	17.2[g]

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD		
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE	YEARS IN AVERAGE[b]
Arbuckle Mountain	5400	1/27	18	4.9	4.4	8.5	15
Battle Mountain Summit	4340	1/27	T	T	3.5	- -	0
Emigrant Springs	3925	1/26	4	1.0	4.6	6.1	15
Lucky Strike	5050	1/25	24	4.9	6.3	9.0	14
Meacham	4300	1/26	10	2.8	5.0	7.1	15
Tollgate	5070	1/26	28	8.8	8.0	19.2	15

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Nearest current data.

UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecost Point
- Snow Course
- Soil Moisture Stotion

WATERSHED LOCATION

WATER SUPPLY OUTLOOK
UPPER JOHN DAY WATERSHEDS
OREGON

as of
FEBRUARY 1, 1961

U.S.DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE . OREGON AGRICULTURAL EXPERIMENT STATION and OREGON STATE ENGINEER

GENERAL OUTLOOK

The water supply outlook for the 1961 irrigation season in the Upper John Day area has not improved during the last month and is still only "fair" to "poor". Low elevation streams are expected to peak early in the season and fall off rapidly due to a lack of snow on lower watersheds.

SNOW COVER

Water content of the snowpack in this area did not make its usual January gains this year and is now only 55 percent of the 1943-57 average. This is slightly less snow water than was on the watershed at this time last year.

Usually by February 1st about 69 percent of the total winter's "snow crop" has fallen on the watershed. This year only 39 percent has been measured to date. It is not likely that the future winter storms will be able to balance this large "deficit" in the "snow bank" reservoir.

SOIL-MOISTURE

Watershed soils in this area are only 42 percent of capacity for the 3 to 4 foot profile. Soils at lower elevations, not covered by snow, lost moisture during January as a result of far below normal precipitation and warmer than normal temperatures.

Soils under the snowpack absorbed some snow melt water and show a slight increase in moisture.

STREAMFLOW

Flow of the John Day River at Service Creek* last month was only 35 percent of the January average for the 1943-57 period. This again is a reflection of far below normal precipitation accompanied by warm January temperatures and snow melt water being absorbed by the soil mantle. The total flow since October 1st at this station has averaged only 54 percent of normal.

Streamflow forecasts for the coming irrigation season range from 77 percent of average (1943-57 period) on Strawberry Creek to 73 percent on the Middle Fork, John Day at Ritter. The John Day at Prairie City forecast is 74 percent of average.

*Preliminary data furnished by U.S. Geological Survey, Portland, Oregon

Report prepared by
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209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW-PERIOD	
	SPRING SEASON	LATE SEASON
Beech Creek	Fair	Poor
Beech Creek-Fox-Long Cr.	Fair	Poor
Bridge-Mountain Creeks	Fair	Poor
Camas Creek	Fair	Fair
Cherry Creek	Fair	Poor
Indian-Pine Creeks	Fair	Poor
John Day River, Main Fork	Fair	Fair
John Day River, Mid. Fork	Fair	Fair
John Day River, N. Fork	Fair	Fair
John Day River, S. Fork	Fair	Fair
Monument-Kimberly	Fair	Fair
Strawberry Creek	Fair	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
0385	John Day at Prairie City	40	April-Sept.	54	74
		37	April-July	49	76
0440	John Day, Middle Fork at Ritter	98	April-Sept.	135	73
0375	Strawberry near Prairie City	7.0	April-Sept.	9.1	77

AVAILABLE SOIL MOISTURE

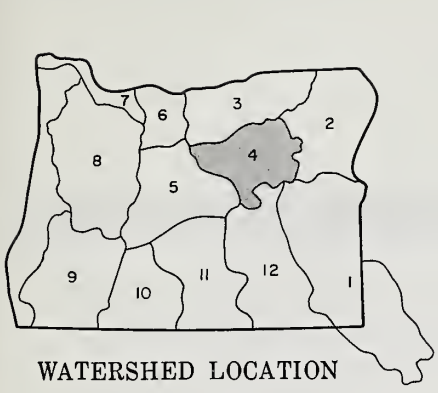
STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Battle Mountain Summit	4340	48	8.0	12-28-60	5.8	4.4	2.6
Blue Mountain Springs	5900	42	12.0	1-26-61	2.8	- -	7.8[h]
Blue Mountain Summit	5100	36	10.4	1-25-61	3.2	2.3	3.3[h]
Derr	5670	24	6.0	c			
Marks Creek	4540	36	8.3	1-27-61	3.5	2.2	4.0
Snow Mountain	6300	48	10.4	c			
Starr Ridge	5150	36	6.1	1-27-61	3.6	5.1	- -

SNOW

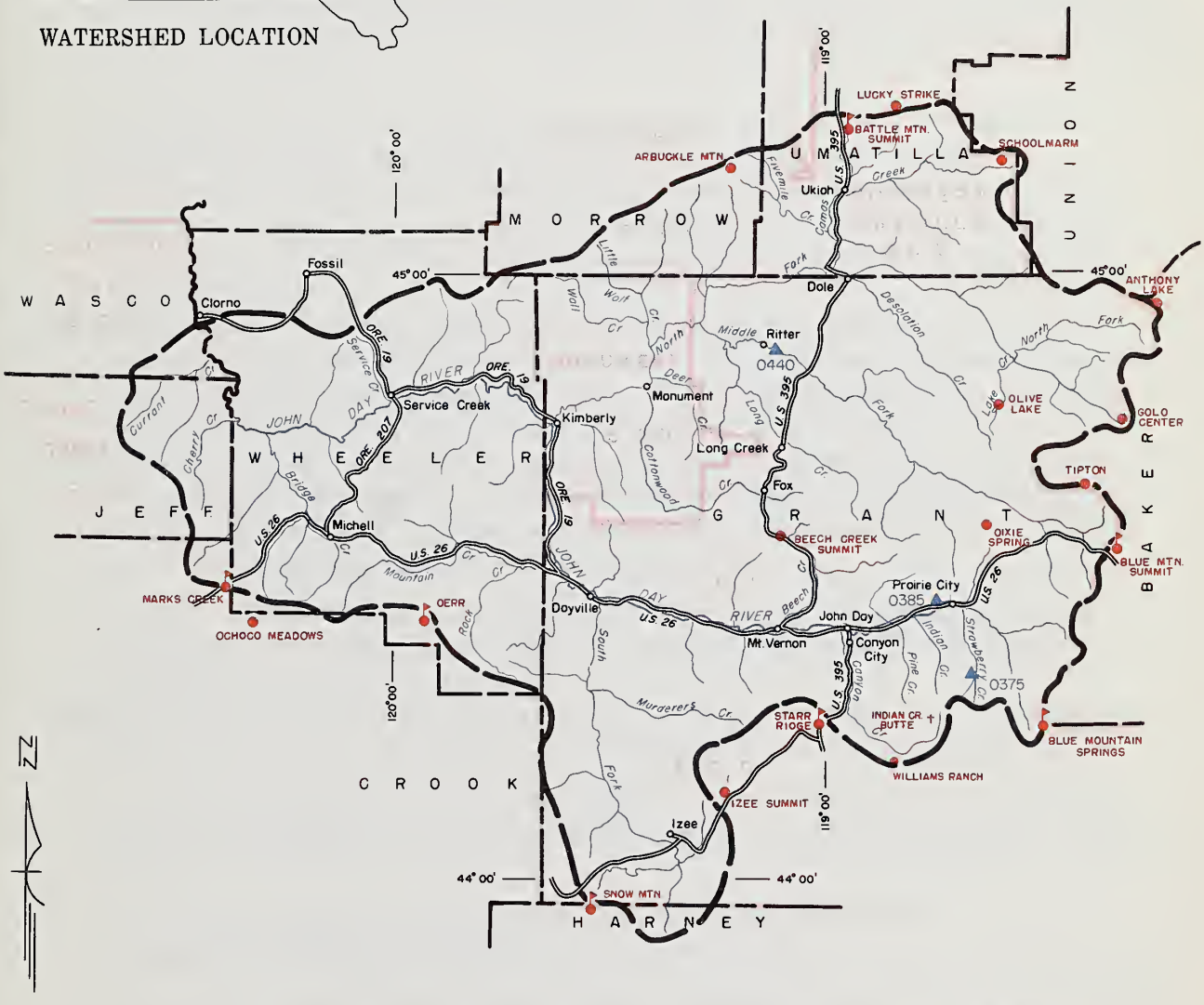
SNOW COURSE		CURRENT INFORMATION			PAST RECORD		
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE	YEARS IN AVERAGE[b]
Anthony Lake	7125	1/24	40	12.2	8.4	21.1	13
Arbuckle Mountain	5400	1/27	18	4.9	4.4	8.5	15
Battle Mountain Summit	4340	1/27	T	T	3.5	- -	0
Beech Creek Summit	4800	1/27	4	1.3	3.5	4.6	14
Blue Mountain Spring	5900	1/26	23	6.6	6.9	11.0	14
Blue Mountain Summit	5098	1/27	17	4.0	3.4	6.9	15
Derr	5670	1/30	16	3.8	5.0	7.4	15
Dixie Springs	6650	c					
Gold Center	5340	1/28	22	5.9	5.4	9.2	14
Indian Creek Butte[e]	6550	c					
Izee Summit	5293	1/27	13	3.4	3.9	6.7	14
Lucky Strike	5050	1/25	24	4.9	6.3	9.0	14
Marks Creek	4540	1/27	0.6	0.1	3.2	4.2	15
Ochoco Meadows	5200	1/27	17	4.6	5.1	8.1	15
Olive Lake	6000	1/30	35	8.5	7.1	13.3	15
Schoolmarm	4775	1/31	8	2.7	2.8	4.0	7
Snow Mountain	6300	c					
Starr Ridge	5150	1/27	8	2.2	3.6	4.9	14
Tipton	5100	1/27	22	5.2	3.9	8.2	12
Williams Ranch	4500	c					

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (h) Nearest current data.

UPPER JOHN DAY WATERSHEDS



WATERSHED LOCATION



LEGEND

- Watershed Boundory
- Sub-watershed Boundory
- Soil Conservation District Bdry.
- County Boundory
- Forecast Point
- Snow Course
- Soil Moisture Station
- † Aeriol Snow Depth Gage

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
UPPER DESCHUTES, CROOKED WATERSHEDS
OREGON

as of
FEBRUARY 1, 1961

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE . OREGON AGRICULTURAL EXPERIMENT STATION and OREGON STATE ENGINEER

GENERAL OUTLOOK - The water supply outlook for the 1961 irrigation season in the mid-state area is still pretty much below average. Crooked River watersheds have less snow than last year and will produce only half the average streamflow - probably less on the Ochoco.

The Deschutes watersheds have a better snow cover than last year and will consequently have better stream flows but still considerably below average.

SNOW COVER - Water content of the mountain snow cover over the two watersheds together averages 48 percent of the normal (15 years 1943-57) and 122 percent of last year. Crooked River watersheds actually have somewhat less snow cover than last year.

SOIL-MOISTURE - Moisture in the top four feet of the soil mantle is only slightly better than last year but it is more concentrated in the upper two feet. Some moisture has been lost from exposed soil surfaces. Records from three electronic stations indicate soil moisture is about 42 percent of capacity.

RESERVOIR STORAGE - The lack of carry-over supplies has a significant effect on the water outlook this year. Storage in Ochoco Reservoir is far below average and less than last year. Inflow to this reservoir is predicted to be only 10,000 acre feet during the April-September period.

Storage in Crane Prairie and Crescent Lake Reservoirs is 77 and 66 percent of normal and behind the amount held last year. Wickiup has 130,000 acre feet compared with 125,000 last year.

STREAMFLOW - Flow of the Deschutes River*, as measured at Moody, has averaged 88 percent normal since October 1st. The January flow was 78 percent normal.

Streamflow forecasts for the Crooked River and for Ochoco Reservoir inflow during the April-September period are 57 percent and 31 percent of average, respectively.

Discharge forecasts for the main Deschutes River at Benham Falls is 75 percent average or 450,000 acre feet for the irrigation season.

Flow of Squaw and Tumalo Creeks has been forecast at 85 and 78 percent average, respectively.

*Preliminary data furnished by U.S. Geological Survey, Portland, Oregon

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WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Arnold Irrigation Dist.	Average	Average
Bear Creek	Fair	Poor
Beaver Creek	Fair	Poor
Camp Creek	Fair	Poor
Central Ore. Irrig. Dist.	Average	Average
Crooked River	Fair	Poor
Deschutes River	Average	Fair
Hay-Trout Creeks	Fair	Poor
Lone Pine Irrig. Dist.	Average	Average
Mill Creek	Fair	Poor
North Unit Irrig. Dist.	Average	Fair
Ochoco Creek	Fair	Poor
Sisters Irrigation Dist.	Fair	Poor
Snow Creek Irrig. Dist.	Fair	Poor
Squaw Creek Irrig. Dist.	Fair	Fair
Swalley Ditch	Average	Average
Tumalo Project	Average	Average
Walker Basin Irrig. Dist.	Average	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR -	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Crane Prairie	55.3	31.8	37.2	41.2
Crescent Lake	117.2	30.6	44.1	46.1
Ochoco	47.5	2.3	3.1	25.0
Wickiup	182.0	130.0	124.8	122.4

Note: The U. S. Bureau of Reclamation indicates that dead storage in the amount of 5360 acre feet may be included in the current storage figure for Crescent Lake.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.)

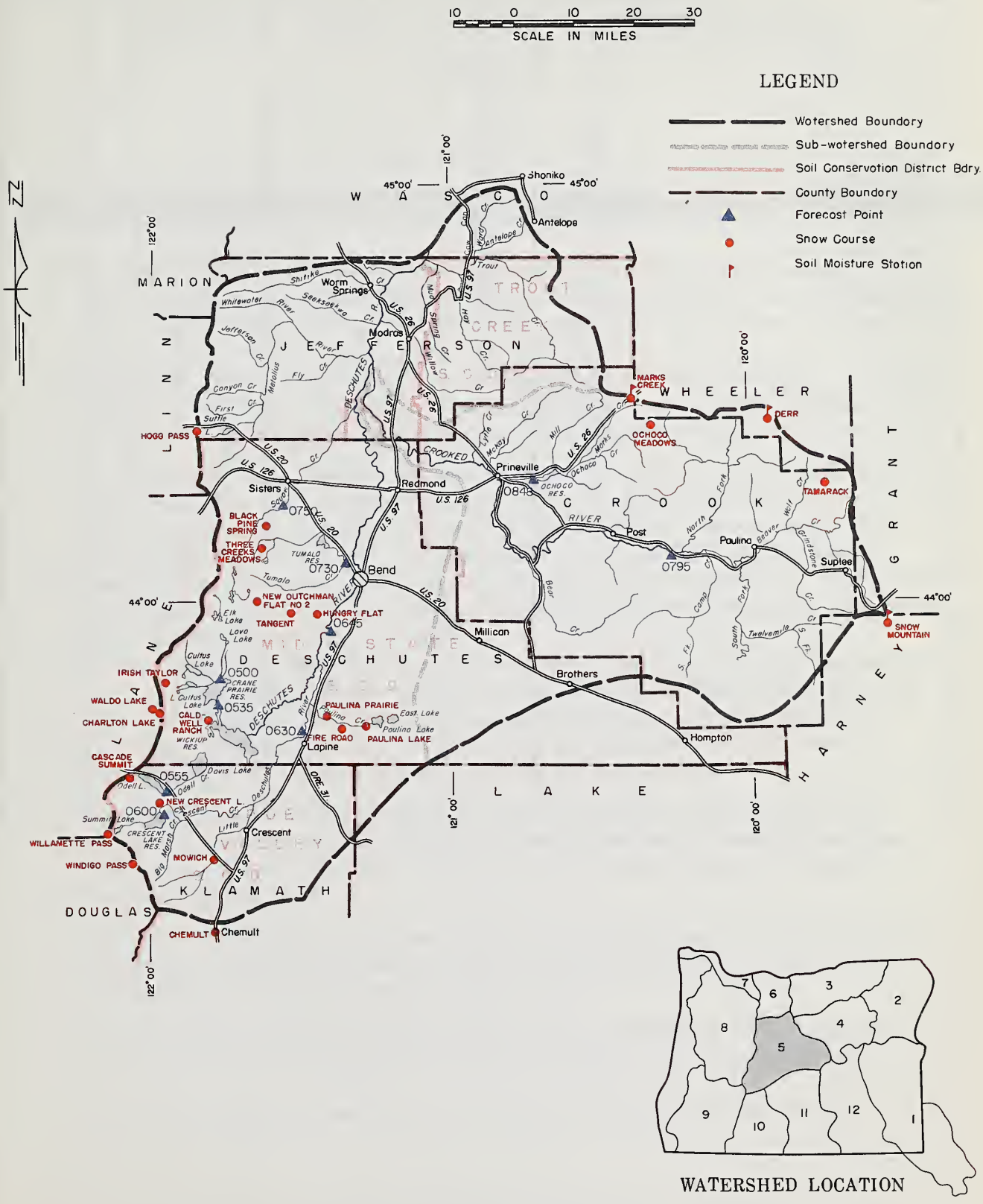
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
0535	Crane Prairie Reservoir total Inflow	94	April-Sept.	143	66
0600	Crescent at Crescent Lake [d]	20	April-Sept.	31	65
0795	Crooked near Post	73	April-Sept.	129	57
0645	Deschutes at Benham Falls [d]	450	April-Sept.	602	75
		307	April-July	404	76
0500	Deschutes below Snow Creek	47	April-Sept.	74	64
0630	Deschutes, Little near Lapine [d]	78	April-Sept.	113	69
		69	April-July	100	69
0848	Ochoco Reservoir net Inflow	10	April-Sept.	32	31
0555	Odell near Crescent	25	April-Sept.	34	74
0750	Squaw near Sisters	47	April-Sept.	55	85
0730	Tumalo near Bend [d]	43	April-Sept.	55	78

AVAILABLE SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Derr	5670	24	6.0	[c]			
Marks Creek	4540	36	8.3	1-27-61	3.5	2.2	4.0
Snow Mountain	6300	48	10.4	[c]			

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Partly estimated.

UPPER DESCHUTES, CROOKED WATERSHEDS



Upper Deschutes, Crooked Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD		
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (inches)	WATER CONTENT (inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE	YEARS IN AVERAGE[b]
Black Pine Spring	4600	1/27	0	0.0	- -	5.2	6
Caldwell Ranch	4400	1/25	11	4.5[g]	4.2	9.1	9
Cascade Summit	4880	1/30	27	9.2	10.0	24.4	15
Charlton Lake	5750	1/24	34	11.8	6.4	20.6	6
Chemult	4760	1/27	14	4.9[g]	4.8	10.0	15
Derr	5670	1/30	16	3.8	5.0	7.4	15
Fire Road	5050	1/18	9	3.9	3.1	- -	3
Hogg Pass	4755	1/26	35	12.3	9.2	32.3	15
Hungry Flat	4400	1/26	T	T	2.4	7.5	6
Irish-Taylor	5500	1/25	40	14.7	11.7	29.5	6
Marks Creek	4540	1/27	0.6	0.1	3.2	4.2	15
Mowich	4700	1/18	1	T	4.1	- -	1
New Crescent Lake	4800	1/19	17	6.4	6.4	12.3	5
New Dutchman Flat No. 2	6400	1/26	64	24.4	13.8	40.4	8
Ochoco Meadows	5200	1/27	17	4.6	5.1	8.1	15
Paulina Lake	6330	1/18	32	10.7	6.2	- -	3
Paulina Prairie	4285	1/18	0	0.0	1.1	- -	3
Snow Mountain	6300	[c]					
Tamarack	4800	[c]					
Tangent	5400	1/26	40	12.9	6.4	20.6	6
Three Creeks Butte	5200	1/27	10	3.5	4.0	- -	3
Three Creeks Meadows	5600	1/27	20	6.9	3.6	13.7	13
Waldo Lake	5500	1/24	30	10.0	7.1	20.9	8
Willamette Pass	5600	1/20	46	15.4	15.8	32.3	7
Windigo Pass	5800	1/19	52	19.5	13.8	35.6	7

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS
OREGON

as of

FEBRUARY 1, 1961

U.S.DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE, OREGON AGRICULTURAL EXPERIMENT STATION and OREGON STATE ENGINEER

GENERAL OUTLOOK - The water supply outlook for the 1961 irrigation season in Hood River and Wasco Counties is "fair" to "poor" and slightly better than last year at this date. The excellent beginning reported one month ago has dissolved in the warm dry spell that has prevailed during most of January.

SNOW COVER - Water content of the mountain snowpack is only 37 percent of average and about the same as one year ago. The big difference is that this year's snowpack is mostly confined to the higher elevations - the low snow has melted off.

In an average winter the snow accumulation usually reaches 60 percent of the total by February 1st. This winter's "snow crop" is so far equal to only 28 percent of the total average accumulation. Remaining winter storms will have to deposit three times as much snow as is now on the ground if this big deficit is to be overcome.

SOIL-MOISTURE - Moisture content of watershed soils is very satisfactory. Heavy November rains coupled with contributions from melting low-elevation snow have produced a situation favorable to runoff.

RESERVOIR STORAGE - No reports have been received from Wasco County reservoirs but it is believed that present storage in Clear Lake, Rock Creek and Badger Lake Reservoirs is behind schedule as are most other reservoirs over the state.

STREAMFLOW - Flow of Hood River* has been 84 percent of the 1943-57 average since October 1st. During January it was 96 percent average.

Forecasted flow of Hood River during the April-September period is 80 percent average for the main stream at Hood River and 78 percent for the West Fork near Dee. Lack of snow in the Mt. Defiance area may mean shortages for Hood River Irrigation District lands.

The flow of White River is forecast at 75 percent average for the irrigation season and smaller tributaries such as Rock, Gate, Threemile, Badger and Tygh Creeks are expected to have much below average flows.

Flow of Mosier, Mill and the Mile Creeks will be considerably below average unless a satisfactory low-elevation snowpack develops to support their flows.

*Preliminary data furnished by U.S. Geological Survey, Portland, Oregon

Report prepared by
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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Aldridge Ditch	Fair	Fair
Badger Creek	Fair	Poor
Dee Irrigation District	Fair	Fair
East Fork Irrig. Dist.	Fair	Fair
Farmers Irrig. Dist.	Fair	Fair
Glacier Irrig. Dist.	Fair	Fair
Hood River Irrig. Dist.	Fair	Poor
Juniper Flat	Average	Fair
Middle Fork Irrig. Dist.	Fair	Fair
Mile Creeks	Fair	Poor
Mill Creek	Fair	Poor
Mount Hood Irrig. Dist.	Fair	Fair
Rock-Gate-Threemile Crs.	Fair	Poor
Tygh Creek	Fair	Poor
White River	Fair	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
1210	Hood near Hood River [d]	292	April-Sept.	365	80
		250	April-July	311	80
1185	Hood, West Fork near Dee	135	April-Sept.	174	78
		120	April-July	151	79
1015	White below Tygh Valley	134	April-Sept.	178	75
		117	April-July	161	73

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD		
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)		YEARS IN AVERAGE[b]
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE	
Brooks Meadows	4300	c					
Clear Lake	3500	1/25	T	T	3.7	8.8	6
Clear Lake Experimental	3500	1/25	8	3.1	6.0	- -	0
Cooper Spur	3490	2/1	0	0.0	- -	- -	0
Greenpoint Reservoir	3400	1/26	2	0.4	8.2	15.6	10
Knebal Springs	3850	c					
Parkdale	1770	2/1	0	0.0	- -	- -	0
Phlox Point	5600	1/25	57	24.6	14.0	43.5	15
Red Hill	4400	1/21	24	8.6	8.4	34.0	9
Still Creek	3700	1/25	14	5.5	6.9	19.3	15
Tilly Jane	6000	1/29	40	16.9	8.6	35.4	9
Ulrich Ranch Junction	3350	c					
Upper Valley	2530	2/1	0	0.0	- -	- -	0

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Partly estimated.

HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course

WATERSHED LOCATION

WATER SUPPLY OUTLOOK
LOWER COLUMBIA WATERSHEDS
OREGON

as of

FEBRUARY 1, 1961

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE . OREGON AGRICULTURAL EXPERIMENT STATION and OREGON STATE ENGINEER

GENERAL OUTLOOK

The water supply outlook for spring and summer flow of the Columbia River near The Dalles is somewhat below normal. The river is forecast to flow 92 million acre feet, which is 87 percent of the 15 year normal (1943-57) for the April-September period.

SNOW COVER

Key snow courses, measured near February 1 in the United States and Canada indicate well below normal snowfall throughout the month of January. The northern portion of the Columbia Basin in Canada has a snowpack near normal, but the remainder of the basin in Washington, Oregon, Montana, Western Wyoming and Idaho is well below average. The snow line is extremely high for this time of the year with practically no snow on the south slopes even at high elevations.

SOIL-MOISTURE

Watershed soils in the northern portion of Columbia Basin and Canada are well primed but in the remainder of the basin, watershed soils are again unusually dry. The first foot to foot and a half of soil is partially primed, but below this level, the soil is extremely dry and expected to reduce streamflow resulting from snow melt this spring.

STREAMFLOW

Flow of the Columbia River near The Dalles* has been fairly close to normal so far this water year:

Month	Percent of Normal Discharge (1943-57)
October	103 adjusted for storage
November	107 " " "
December	82 " " "
January	78 " " "

*From preliminary data furnished by U.S. Geological Survey, Portland, Oregon

Report prepared by

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

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M.W. NELSON - P.O. BOX 1247, BOISE, IDAHO

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.)

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
1057	Columbia at The Dalles	92,000 62,600	April-Sept. April-June	106,100 72,000	87 87

HISTORICAL DATA (Columbia River at The Dalles)

YEAR	STREAMFLOW[c] (1,000 A.F.) APR. — SEPT.	APR. — JUNE	MAY — JUNE	PEAK[e] (1,000 c.f.s)	DATE
1943	115,000	75,300	52,400	541	June 21
1944	61,900	39,200	32,100	326	June 19
1945	81,600	54,600	47,300	505	June 8
1946	108,100	75,400	59,600	581	May 30
1947	100,300	70,000	56,800	536	May 11
1948	130,500	94,600	81,900	999	May 31
1949	95,700	71,400	56,000	622	May 18
1950	120,400	74,700	61,200	744	June 25
1951	113,000	75,600	59,100	597	May 26
1952	107,700	77,500	57,300	557	May 28
1953	100,600	64,900	55,800	609	June 17
1954	119,500	70,500	59,300	561	May 23
1955	99,500	58,300	50,300	545	June 26
1956	131,400	96,900	75,800	815	June 3
1957	105,700	80,500	67,200	700	May 22
1943-57 Avg.	106,100	72,000	58,100	616	
1958	97,700	72,000	58,600	593	May 31
1959	112,500	71,900	58,900	555	June 23

LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria)[f]

VANCOUVER[g] GAGE (Weather Bu.)	FLOW AT THE DALLES (1,000 c.f.s)	DRAINAGE DISTRICT PUMPHOUSE SANDY	SAUVIE ISL.	SCAPPOOSE	DEER ISL.	RAINIER	BEAVER	WOODSON
		RIVER MILES 118.9	96.0	91.0	77.0	62.0	52.0	47.0
35 (1894)	1210	41.2	34.2	33.3	28.5	21.9	17.5	15.5
34	1160	40.5	33.5	32.5	27.7	21.2	17.0	15.0
33	1100	39.6	32.4	31.4	26.7	20.2	16.1	14.3
32	1050	38.9	31.5	30.5	25.7	19.5	15.4	13.7
31 (1948)	1000	38.0	30.7	29.5	25.1	18.8	14.7	13.0
30	940	36.6	29.5	28.5	24.3	18.1	14.0	12.4
29	890	35.5	28.5	27.7	23.7	17.5	13.4	11.8
28	840	34.3	27.5	26.7	22.8	17.0	13.0	11.4
27 (1956)	790	33.0	26.5	25.6	21.8	16.2	12.5	11.0
26 (1950)	750	32.1	25.5	24.6	20.9	15.5	12.2	10.7
25	700	30.7	24.2	23.2	19.7	14.6	11.7	10.3
24	660	29.7	23.0	22.2	19.0	14.1	11.4	10.2
23	630	29.0	22.3	21.4	18.4	13.6	11.2	10.0
22	590	28.1	21.4	20.3	17.2	13.0	10.9	9.7
21	560	27.2	20.7	19.5	16.4	12.6	10.6	9.6
20	530	26.2	19.8	18.6	15.5	12.1	10.2	9.4
19	510	25.5	19.2	18.0	15.0	11.8	10.0	9.3
18	480	24.4	18.3	17.2	14.3	11.4	9.8	9.1
17	450	23.4	17.4	16.4	13.7	11.0	9.6	8.9
16	430	22.4	16.5	15.5	13.0	10.5	9.3	8.7

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Observed flow corrected for storage in F.D.R., Kootenai, Pend Oreille, Flathead, Hungry Horse, Lake Chelan, Coeur d'Alene and Grand Coulee Equalizer. (d) Not scheduled. (e) Observed peak. (f) Based on Corps of Engineers automatic water stage recorder data. (g) Vancouver Weather Bureau gage zero is 1.82' above M.S.L. All other readings are in feet above M.S.L.

LOWER COLUMBIA WATERSHEDS

WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- (50) River Miles

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
WILLAMETTE WATERSHEDS
OREGON

as of

FEBRUARY 1, 1961

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE, OREGON AGRICULTURAL EXPERIMENT STATION and OREGON STATE ENGINEER

GENERAL OUTLOOK

The water supply outlook for 1961 irrigation in the Willamette Valley has not improved and has become slightly poorer than the "fair" outlook predicted one month ago. Storms have been few and far between and have arrived with above normal temperatures, causing precipitation to fall as rain rather than as snow which accumulates for a later runoff in the regular melting season.

SNOW COVER

Water content of the mountain snowpack is exceedingly low - lower percentage-wise (only 27 percent of average) than on any other major watershed area in the state. There is now one-third less snow-water available than last year at this date when it was only 40 percent of the average. With this big a "deficit", it is highly unlikely that remaining winter storms will deposit enough moisture to "balance the budget in the snow bank."

SOIL-MOISTURE

Watershed soils at higher elevations have been well recharged by heavy late November rainstorms. Likewise, most valley soils have been well wetted.

RESERVOIR STORAGE

Storage of water in the five multi-purpose reservoirs operated by the Corps of Army Engineers is about 35 percent less than at this date last year but will gradually increase in accordance with pre-arranged planning.

STREAMFLOW

Flow of the Middle Fork of the Willamette River* has been below average since October 1st except for a short four days at Thanksgiving time when discharge was exceptionally high. Discharge has been 71 percent of the 1943-57 average.

Streamflow forecasts for Willamette tributaries during the April-September period are all below average and vary from a high of 75 percent average on upper Clackamas River and the McKenzie to a low of 66 percent on the South Santiam.

Discharge of the Molalla, Pudding, Calapooya and smaller streams is expected to be about two-thirds average or less.

*Preliminary data furnished by U.S. Geological Survey, Portland, Oregon

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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Calapooya	Fair	Poor
Clackamas	Fair	Fair
McKenzie	Fair	Fair
Molalla	Fair	Poor
Santiam, North	Fair	Fair
Santiam, South	Fair	Fair
Willamette, Coast Fork	Fair	Fair
Willamette, Middle Fork	Fair	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottage Grove	30.0*	1.4	2.4	0.5
Detroit	299.9*	16.9	14.5	27.9
Dorena	70.5*	2.5	5.8	2.6
Fern Ridge	94.2*	8.6	8.9	19.3
Lookout Point	337.2*	11.7	34.3	- -

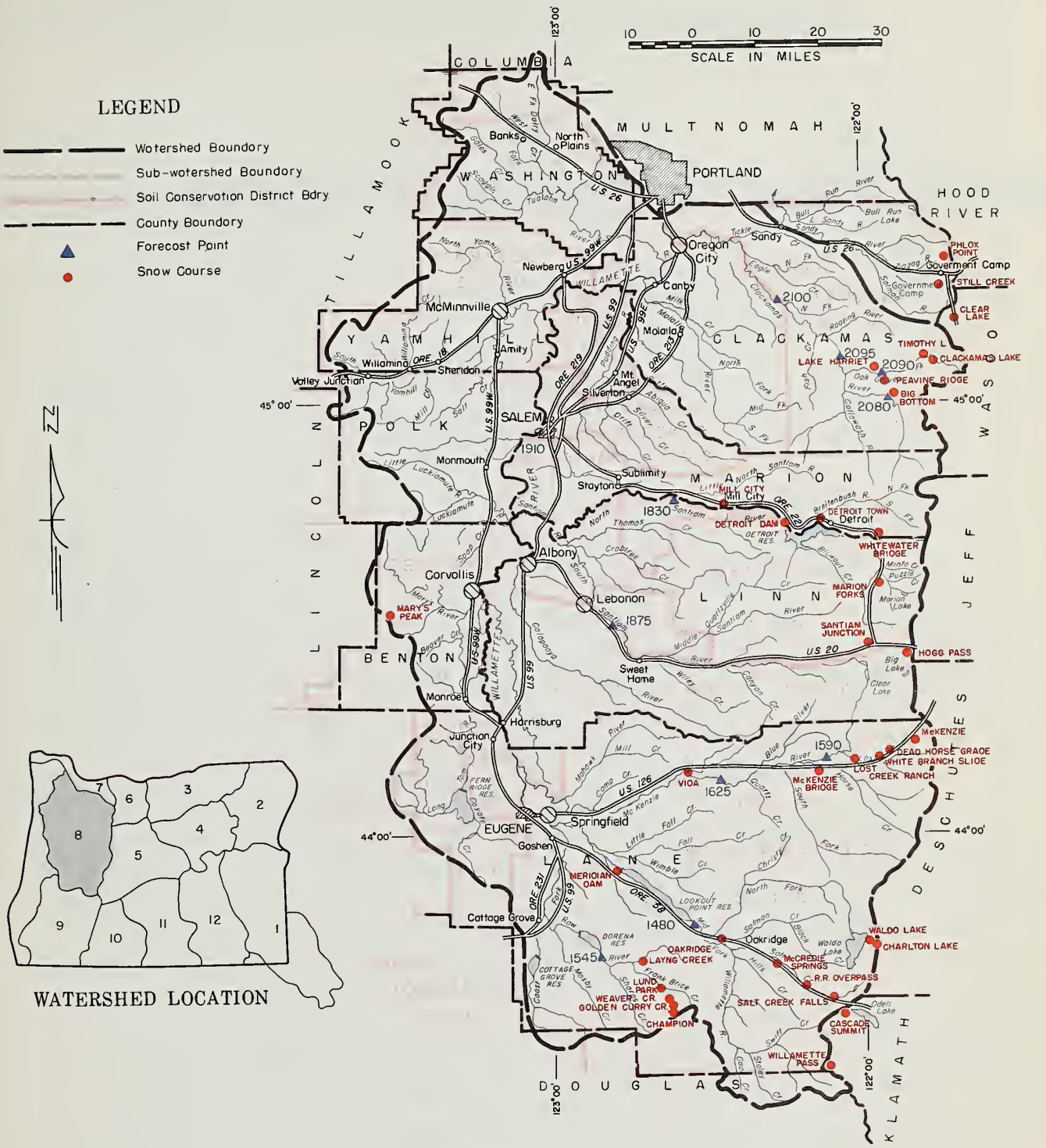
*Multiple purpose reservoir--space reserved primarily for flood runoff.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.)

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
2080	Clackamas at Big Bottom	128	April-Sept.	184	70
		105	April-July	150	70
2100	Clackamas at Estacada	644	April-Sept.	879	73
		580	April-July	763	76
2095	Clackamas above Three Lynx	484	April-Sept.	674	72
		420	April-July	578	73
1590	McKenzie at McKenzie Bridge	477	April-Sept.	640	75
		356	April-July	488	73
1625	McKenzie near Vida	990	April-Sept.	1362	73
		796	April-July	1120	71
2090	Oak Grove Fork above Power Intake	150	April-Sept.	198	76
		116	April-July	156	74
1545	Row near Dorena	77	April-Sept.	114	68
		74	April-July	109	67
1830	Santiam, North at Mehama [d]	644	April-Sept.	968	67
		558	April-July	866	64
1875	Santiam, South at Waterloo	430	April-Sept.	652	66
		395	April-July	616	64
1480	Willamette, Mid. Fk. blw. N. Fk. nr. Oakridge	667	April-Sept.	909	73
		587	April-July	804	73
1910	Willamette at Salem [d]	4040	April-Sept.	5461	74
		3560	April-July	4942	72

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed.

WILLAMETTE WATERSHEDS



WATERSHED LOCATION

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD		
					WATER CONTENT (Inches)		
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE	YEARS IN AVERAGE [b]
Big Bottom	2118	1/27	0	0.0	2.7	5.8	6
Cascade Summit	4880	1/30	27	9.2	10.0	24.4	15
Champion	4500	1/30	0	0.0	11.5	20.1	15
Charlton Lake	5750	1/24	34	11.8	6.4	20.6	6
Clackamas Lake	3400	c					
Clear Lake	3500	1/25	T	T	3.7	8.8	6
Clear Lake Experimental	3500	1/25	8	3.1	6.0	- -	0
Dead Horse Grade	3800	1/30	0	0.0	7.1	18.4	8
Detroit Town	1610	1/26	0	0.0	2.7	3.6	8
Detroit Dam	1580	1/26	0	0.0	T	1.4	8
Golden Curry Creek	3136	1/30	0	0.0	2.6	8.0	8
Hogg Pass	4755	1/26	35	12.3	9.2	32.3	15
Lake Harriet	2045	1/27	0	0.0	4.3	3.7	7
Layng Creek	1200	1/30	0	0.0	0.0	0.4	8
Lost Creek Ranch	1956	1/30	0	0.0	3.8	5.2	6
Lund Park	1740	1/30	0	0.0	0.0	2.2	8
Marion Forks	2730	1/26	0	0.0	4.8	11.7	15
Marys Peak	3620	1/31	0	0.0	- -	7.6	10
McCredie Springs	2120	1/30	0	0.0	T	1.9	8
McKenzie	4800	1/30	32	12.1	11.8	33.5	11
McKenzie Bridge	1372	1/30	0	0.0	T	2.6	9
Meridian Dam	750	1/30	0	0.0	0.0	0.0	7
Mill City	826	1/26	0	0.0	0.0	0.4	8
Oakridge	1310	1/30	0	0.0	0.0	0.3	8
Peavine Ridge	3500	1/27	9	3.7	7.8	13.9	15
Phlox Point	5600	1/25	57	24.6	14.0	43.5	15
Railroad Overpass	2750	1/30	0	0.0	3.0	5.1	8
Salt Creek Falls	4000	1/30	0	0.0	7.8	15.0	8
Santiam Junction	3990	1/26	11	4.2	6.2	19.7	15
Still Creek	3700	1/25	14	5.5	6.9	19.3	15
Timothy Lake	3295	1/27	10	3.9	5.7	- -	2
Vida	800	1/30	0	0.0	0.0	0.5	8
Waldo Lake	5500	1/24	30	10.0	7.1	20.9	8
Weaver Creek	2440	1/30	0	0.0	0.0	2.1	7
White Branch Slide	2800	1/30	0	0.0	3.5	8.4	9
Whitewater Bridge	2175	1/26	0	0.0	4.0	7.4	8
Willamette Pass	5600	1/20	46	15.4	15.8	32.3	7

WATER SUPPLY OUTLOOK
ROGUE, UMPQUA WATERSHEDS
OREGON

as of
FEBRUARY 1, 1961

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE . OREGON AGRICULTURAL EXPERIMENT STATION and OREGON STATE ENGINEER

GENERAL OUTLOOK - The outlook for 1961 irrigation water supplies in the Rogue-Umpqua watersheds has not improved and is poorer than it was on January 1st. Mountain snow cover is now poorer than it was at this date last year. Stored water supplies are far below average in three out of five reservoirs.

SNOW COVER - Water content of the snowpack is 76 percent of last year but is only 47 percent of the February 1 average. Storms during January were generally warmer than usual and deposited snow mostly at the highest elevations, leaving lower slopes barren.

In an average winter about two-thirds of the winter "snow crop" is deposited on the ground by February 1st. This winter, the accumulation is actually less than one-third of the usual snowpack. The situation is worse than last year.

SOIL-MOISTURE - Moisture in the soil mantle (the top four feet) of the Rogue-Umpqua watersheds is satisfactory and will favor snow-melt runoff.

RESERVOIR STORAGE - Stored water for the Medford and Rogue River Valley Irrigation Districts totals about 6,400 acre feet at this date and is 80 percent of last year and only 48 percent of average.

The Talent Irrigation District has about 20,000 acre feet in storage which is half again as much as was available a year ago. This is due largely to new storage facilities at Howard Prairie and Emigrant Gap.

STREAMFLOW - Flow of the Rogue River at Raygold* has averaged only 53 percent normal for the period since October 1st and only 30 percent normal during January.

Streamflow forecasts for the irrigation season (April-September) indicate the larger tributaries of the North Umpqua and Rogue Rivers are expected to discharge from 70 to 77 percent of their average amounts. Smaller, but very important Little Butte Creek is predicted to discharge 62 percent of average.

Although the inflow to Fourmile Lake is expected to be about 72 percent of average, the flow into Hyatt Lake at much lower elevation is expected to be only 32 percent of average. This is mainly caused by a lack of low elevation snow this year.

All streams in the Rogue-Umpqua area are expected to produce less water than last year.

*Preliminary data furnished by U.S. Geological Survey, Portland, Oregon

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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Althouse Creek	Fair	Poor
Applegate River, Big	Fair	Fair
Applegate River, Little	Fair	Poor
Ashland Creek	Fair	Poor
Butte Creek, Little	Fair	Poor
Butte Creek, Big	Fair	Fair
Cow Creek	Fair	Poor
Deer Creek	Fair	Poor
Elk Creek	Fair	Poor
Emigrant Cr. (above Res.)	Fair	Poor
Evans Creek	Fair	Poor
Gold Hill Irrigation Dist.	Average	Fair
Grants Pass Irrig. Dist.*	Average	Average
Grave Creek	Fair	Poor
Illinois River, East Fork	Fair	Fair
Illinois River, West Fork	Fair	Fair
Neil Creek	Fair	Poor
Red Blanket Creek	Average	Fair
Rogue River	Average	Fair
Sucker Creek	Fair	Fair
Table Rock Irrig. Dist.	Average	Fair
Thompson Creek	Fair	Poor
Wagner Creek	Fair	Poor
Williams Creek	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Emigrant Gap	39.0	8.9	0.0[h]	5.2
Fish Lake	7.8	3.4	3.8	5.0
Fourmile Lake	16.1	3.0	4.2	8.3
Howard Prairie	60.0	10.3	5.9	- -
Hyatt Prairie	16.1	1.5	6.4	6.1

*Minimum flow of Rogue River at Raygold will probably fall below a minimum flow of 1000 c.f.s. but not below 900 c.f.s. if summer conditions of temperature and rainfall are average.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
3620	Applegate near Copper	100	April-Sept.	131	76
3145	Clearwater above Trap Creek [d]	53	April-Sept.	73	73
5045	Fourmile Lake net Inflow [d]	5.3	April-Sept.	7.4	72
5140	Hyatt Reservoir net Inflow [d]	2.0	April-Sept.	6.2	32
3770	Illinois River at Kerby [d]	150	April-Sept.	196	77
3425	Little Butte, N. Fk. at Fish Lake nr. Lk. Cr.[d]	10.4	April-Sept.	16.9	62
3415	Little Butte, S. Fk. near Lake Creek	26	April-July	42	61
	Note: Minimum flow will drop to 100 c.f.s. by May 16				
3280	Rogue above Prospect	255	April-Sept.	351	73
		207	April-July	293	71
3320	Rogue, South Fork near Prospect [d]	60	April-Sept.	83	72
		50	April-July	71	70
3350	Rogue below South Fork	531	April-Sept.	749	71
		425	April-July	608	70
3590	Rogue at Raygold near Central Point	705	April-Sept.	1004	70
		590	April-July	842	70
3615	Rogue at Grants Pass	672	April-Sept.	974	69
3135	Umpqua, North blw. Lemolo Res. near Toketee Falls [d]	138	April-Sept.	186	74

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not Surveyed. (h) Construction. (i) 7 of 18 sampling points. (j) Partly estimated.

ROGUE, UMPQUA WATERSHEDS

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD		
					WATER CONTENT (Inches)		
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE	YEARS IN AVERAGE[b]
Althouse	4530	1/27	0	0.0	1.7	5.4	14
Annie Spring	6018	1/28	53	17.9	16.3	30.1	14
Beaver Dam Creek	5100	1/30	15	5.4	6.8	- -	0
Big Red Mountain	6500	1/30	35	12.1	17.5	21.4	12
Billie Creek Divide	5300	1/30	26	9.2	10.3	17.6	12
Champion	4500	1/30	0	0.0	11.5	20.1	15
Cold Springs Camp	6100	1/31	54	16.2	12.4	- -	0
Deadwood Junction	4600	1/30	T	T	6.4	- -	0
Diamond-Crater Summit	5800	1/24	44	14.1	11.5	- -	0
Diamond Lake	5315	1/24	22	8.5	10.1	18.3	15
Eden Valley Summit	2390	*f*					
Fish Lake	4865	1/30	5	2.0	7.8	10.6	14
Fourmile Lake	6000	1/30	36	15.0	11.4	24.4	7
Grayback Peak	6000	1/31	20	7.7	17.4	18.0	13
Hazel View	2500	1/27	0	0.0	0.0	- -	2
Hobart Lake	5010	*g*					
Howard Prairie	4500	1/30	10	3.3	5.1	- -	0
Hyatt Prairie Reservoir	4900	1/30	T	T	7.2	7.9	14
Little Red Mountain	6500	Survey delayed					
North Umpqua	4215	1/27	10	3.6	6.8	12.5	8
Page Mountain	4045	1/27	0	0.0	1.3	- -	3
Park Headquarters	6450	1/28	67	24.8	18.7	38.5	12
Red Butte #1	4560	1/30	0	0.0	10.5	- -	0
Red Butte #2	4000	1/30	0	0.0	6.3	- -	0
Rye Spring Spur	5000	1/30	T	T	8.6	- -	0
Seven Lakes #1	6800	1/25	63	24.8	19.8	31.1	9
Seven Lakes #2	6200	1/25	51	17.2	14.3	25.3	10
Silver Burn	3720	1/30	6	2.2	8.8	10.9	15
Siskiyou Summit	4630	1/29	0	0.0	5.2	7.4	15
South Fork Canal	3500	1/30	0	0.0	3.2	3.8	15
Trap Creek	3800	1/26	6	2.4	6.0	11.9	5
Wagner Butte	6900	*g*					
Whaleback	5140	1/27	35	12.5	11.9	27.9	13
Windigo Pass	5800	1/19	52	19.5	13.8	35.6	7

WATER SUPPLY OUTLOOK
KLAMATH WATERSHEDS
OREGON

as of
FEBRUARY 1, 1961

U.S.DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE . OREGON AGRICULTURAL EXPERIMENT STATION and OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for 1961 irrigation water supplies in Klamath Basin has not improved during the past month but has deteriorated to nearly the same unsatisfactory situation prevailing one year ago at this date.

SNOW COVER

Water content of the mountain snowpack is only 56 percent of the average for February 1 (1943-57), the same as last year at this date. The big difference, however, is that low elevation snow is less and high elevation snow is greater than last year. The near average snowpack reported last month has dissolved in the warm dry weather of the past month.

Remaining storms will have to deposit double the present amount of snow if Klamath Basin is to have a normal water season.

SOIL-MOISTURE

Moisture in the upper watershed soil mantle is satisfactory for a good runoff from the snowpack. Moisture penetration in the soils on the east side of the Klamath Basin varies from 12 to 18 inches.

RESERVOIR STORAGE

Stored water in Upper Klamath Lake is 89 percent of average and considerably greater than last year. Water held in Gerber and Clear Lake Reservoirs is only 13 and 51 percent of the 1943-57 average. Inflow to these east side reservoirs is expected to be far below average.

STREAMFLOW

Inflow into Upper Klamath Lake* has been 83 percent of average since October 1st. Only 70 percent average in January.

Forecasts of streamflow for the April-September irrigation season for Williamson River and Sprague River are 66 and 49 percent of average, respectively. Total net inflow to Upper Klamath Lake is predicted to be 68 percent of the 15 year average (1943-57).

Inflow to Gerber and Clear Lake Reservoirs will be much lower and is predicted to be 40 and 30 percent of average.

The water outlook in Klamath Basin can be improved considerably if remaining storms produce heavy deposits of snow in the mountains.

*Preliminary data from California-Oregon Power Company, Medford, Oregon

Report prepared by
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209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Ft. Klamath Valley	Average	Fair
Lost River (Clear Lake)	Fair	Fair
Lost River (Gerber)	Fair	Fair
Lost River (Willow Res.)	Fair	Poor
Sprague River	Fair	Poor
Upper Klamath Lake	Average	Fair
Williamson River	Average	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	440.2	106.7	161.2	208.8
Gerber	94.0	4.5	2.8	34.7
Upper Klamath Lake	584.0	308.5	248.6	348.5

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.)

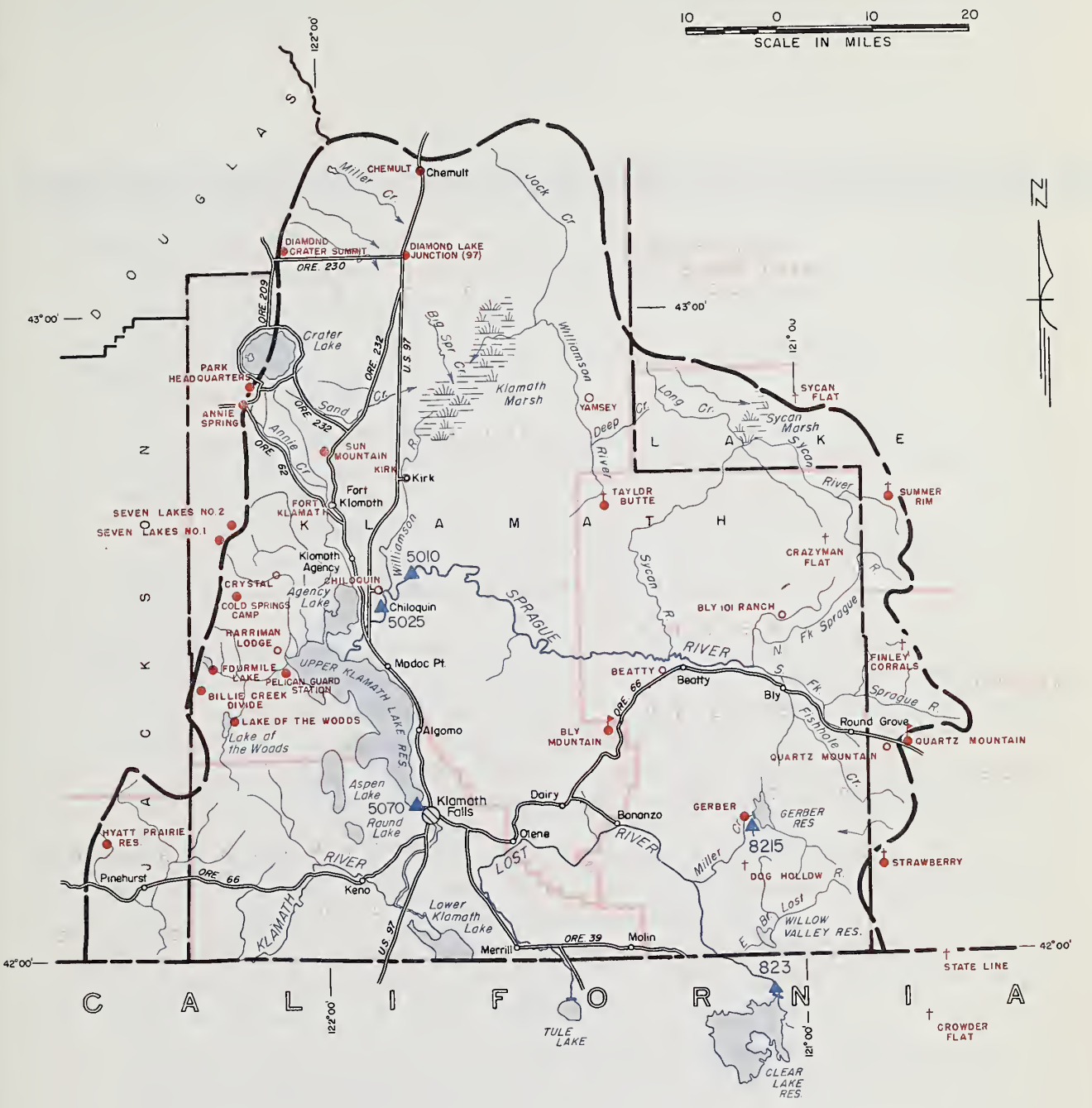
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
923	Clear Lake Reservoir Inflow [g]	15	April-Sept.	50	30
		35	March-July	88	40
8215	Gerber Reservoir inflow [g]	10	April-Sept.	25	40
		20	March-July	44	45
5010	Sprague near Chiloquin	145	April-Sept.	296	49
5070	Upper Klamath Lake net Inflow [g]	430	April-Sept.	632	68
		340	April-July	518	66
5025	Williamson below Sprague River [d]	320	April-Sept.	486	66
		280	April-July	413	68

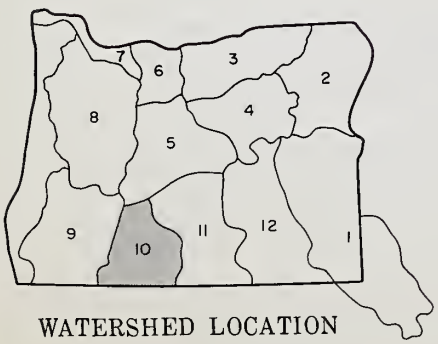
SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD		
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE	YEARS IN AVERAGE[b]
Annie Spring	6018	1/28	53	17.9	16.3	30.1	14
Beatty (COPCO)	4300	[f]					
Billie Creek Divide	5300	1/30	26	9.2	10.3	17.6	12
Bly Mountain	5090	1/27	12	3.6	4.1	- -	0
Bly 101 Ranch (COPCO)	4800	[f]					
Chemult	4760	1/27	14	4.9	4.8	10.0	15
Chiloquin (COPCO)	4187	1/31	0	0.0	0.6	2.3	15
Cold Springs Camp	6100	1/31	54	16.2	12.4	- -	0
Crazyman Flat [e]	6100	1/24	12	4.7	4.6	- -	0
Crowder Flat [e]	5200	1/23	0	0.0	2.8	3.1	9
Crystal (COPCO)	4200	[f]					
Diamond-Crater Summit	5800	1/24	44	14.1	11.5	- -	0
Diamond Lake Junction (97)	4600	1/24	8	2.9	3.5	- -	0
Dog Hollow [e]	4900	1/23	0	0.0	1.2	- -	0
Finley Corrals [e]	6000	1/24	24	9.4	7.6	- -	0
Fort Klamath (COPCO)	4150	1/31	0	0.0	4.2	3.9	15
Gerber	4850	2/1	0	0.0	2.1	3.0	8
Harriman Lodge (COPCO) (Renamed Tomahawk Ski Bowl)	4200	[f]					
Hyatt Prairie Reservoir	4900	1/30	T	T	7.2	7.9	14
Kirk (COPCO)	4533	[f]					
Lake of the Woods	4960	1/25	15	5.9	3.5	9.6	15
Park Headquarters	6450	1/28	67	24.8	18.7	38.5	12
Pelican Guard Station	4150	1/30	T	T	2.6	- -	0
Quartz Mountain	5320	1/27	7	2.8	4.9	5.8	15
Quartz Mountain (COPCO)	5504	1/27	7	2.4	5.0	5.8	13
Seven Lakes #1	6800	1/25	63	24.8	19.8	31.1	9
Seven Lakes #2	6200	1/25	51	17.2	14.3	25.3	10
State Line [e]	5750	1/23	9	3.1	4.8	- -	0
Strawberry	5600	1/21	10	3.1	4.2	6.5	8
Summer Rim [e]	7200	1/25	27	10.5	5.5	- -	0
Sun Mountain	5350	1/23	35	11.0	9.3	20.2	15
Sycan Flat [e]	5500	1/24	10	3.9	5.5	- -	0
Taylor Butte	5100	1/23	7	2.5	2.4	4.6	12
Yamsey (COPCO)	4600	[f]					

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) From COPCO or USBR records of inflow. (h) Flashboards increase capacity to 513.0 (i) Water content partly estimated.

KLAMATH WATERSHEDS





WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Aerial Snow Depth Gage
- COPCO Snow Station
- Soil Moisture Station

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
LAKE COUNTY, GOOSE LAKE WATERSHEDS
OREGON

as of
FEBRUARY 1, 1961

U.S.DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE, OREGON AGRICULTURAL EXPERIMENT STATION and OREGON STATE ENGINEER

GENERAL OUTLOOK - The 1961 irrigation water supply outlook has not improved during the last month for Lake County watersheds and is now only "fair" to "poor". Stored water supplies are only one-fifth normal and streamflow forecasts are extremely low.

SNOW COVER - Snow cover in this area is less than last year at this time and only 42 percent of average for February 1.

On an average year the snowpack has usually reached the 76 percent level of total water accumulation by February 1st. This year, current snow measurements indicate that only 44 percent of the usual total was on the watershed at the time of measurement. This is 6 percent less water than was measured last year on February 1 and it is not likely that future winter storms will be able to make up such a large deficit and produce a normal snow cover on Lake County watersheds.

SOIL-MOISTURE - Soil moisture on the upper watersheds has improved slightly during the last month. Warmer than normal temperatures caused some snow melt water to be absorbed by the soil mantle. This is true only on higher watersheds covered by snow however, since precipitation in lower non-snow covered valleys was only about half normal for the month of January. Warm temperatures may have caused some soil moisture loss from these lower, more exposed watersheds.

RESERVOIR STORAGE - Storage in Cottonwood and Drews Reservoirs is only 20 percent of the 1943-57 average for February 1. Drews Reservoir had 7,200 acre feet on February 1st, is not likely to fill again this year.

STREAMFLOW - Water supply forecasts covering the irrigation season for Lake County streams range from 38 percent for the inflow to Drews Reservoir to 63 percent of the 1943-57 average for Deep Creek.

Honey Creek is expected to flow about 10,000 acre feet for the April-June period and Twentymile Creek about 12,000 acre feet for this same period, both are in the low 60 percent class.

Drews Reservoir inflow is expected to be about 18,000 acre feet March through July. This flow added to the amount now in storage amounts to a little less than half the usable capacity of the reservoir.

Much above normal snowfall is needed during remaining winter months if Lake County is to have a near normal water supply this year.

Report prepared by
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209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Chewaucan River	Fair	Fair
Crooked Creek	Fair	Poor
Deep Creek	Fair	Poor
Dry Creek	Fair	Poor
East Side Goose Lake	Fair	Poor
Guano Lake	Fair	Poor
Honey Creek	Fair	Poor
Lakeview Water Users Assn.	Fair	Poor
Rock Creek (Hart Mtn.)	Fair	Poor
Silver-Buck Creeks	Fair	Poor
Summer Lake	Fair	Fair
Thomas Creek	Fair	Poor
Twentymile Creek	Fair	Poor
Warner Lakes	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottonwood	4.1	0.5	0.2	0.3
Drew	63.0	7.2	8.9	37.5

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.)

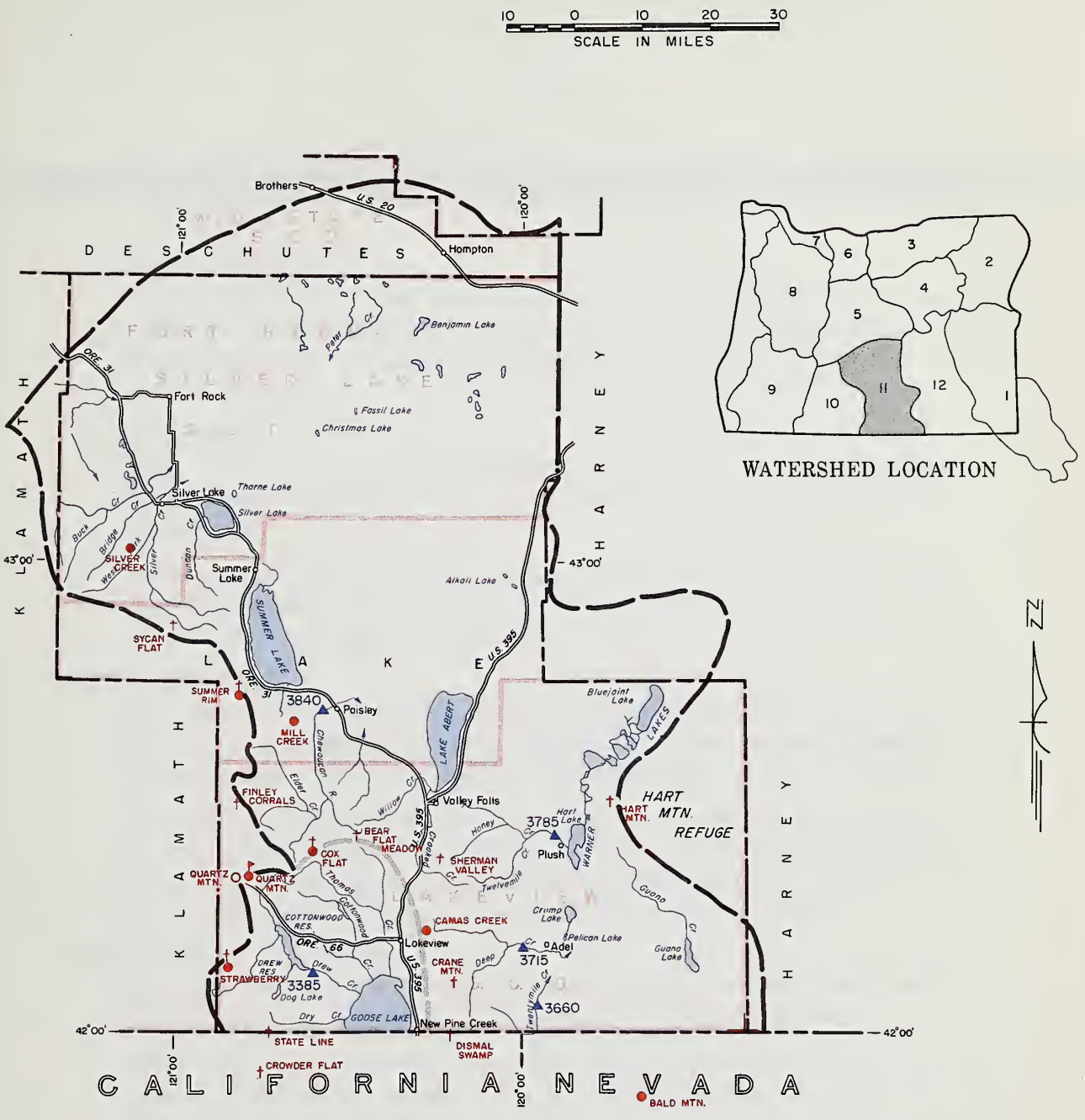
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
3840	Chewaucan near Paisley	c	April-June	82	
3715	Deep above Adel	45	April-June	71	63
3385	Drew Reservoir net Inflow	c	April-July	34	
		18	March-July	47	38
3785	Honey near Plush	10	April-June	16.3	61
3660	Twentymile near Adel	12	April-June	20	60

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD		
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE	YEARS IN AVERAGE[b]
Bald Mountain (Nev.)	6720	c					
Bear Flat Meadow [e]	5900	1/25	12	4.7	5.3	- -	0
Camas Creek	5720	1/29	14	4.4	5.0	8.5	15
Cox Flat [e]	5750	1/24	6	2.3	4.8	- -	0
Crane Mountain [e]	6020	1/23	6	1.9	5.3	- -	0
Crowder Flat [e]	5200	1/23	0	0.0	2.8	3.1	9
Dismal Swamp [e] (Calif.)	7000	1/23	26	8.1	5.5	- -	0
Finley Corrals [e]	6000	1/24	24	9.4	7.6	- -	0
Hart Mountain [e]	6350	1/23	T	T	0.4	- -	0
Mill Creek	6200	c					
Mosquito Lake [e] (Little Bally Mtn.)	6600	1/23	T	T	- -	- -	0
Quartz Mountain (COPCO)	5504	1/27	7	2.4	5.0	5.8	13
Quartz Mountain	5320	1/27	7	2.8	4.9	5.8	15
Sherman Valley [e]	6600	1/23	21	6.5	7.6	- -	0
Silver Creek	4900	1/27	3	1.2	2.3	3.3	14
State Line [e]	5750	1/23	9	3.1	4.8	- -	0
Strawberry	5600	1/21	10	3.1	4.2	6.5	8
Summer Rim [e]	7200	1/25	27	10.5	5.5	- -	0
Sycan Flat [e]	5500	1/24	10	3.9	5.5	- -	0

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed.

LAKE COUNTY, GOOSE LAKE WATERSHEDS



WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Aeriol Snow Depth Goge
- COPCO Snow Station
- Soil Moisture Station

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
HARNEY BASIN WATERSHEDS
OREGON

as of
FEBRUARY 1, 1961

U.S.DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE, OREGON AGRICULTURAL EXPERIMENT STATION and OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1961 irrigation water supply outlook for Harney Basin is worse than last month and is now only "fair" to "poor." Precipitation during January was far below normal, causing much below average snow cover over the watershed at this time.

SNOW COVER

Snow cover on Harney Basin watersheds averages only two-thirds as much water content as at this time last year and is only 43 percent of the 1943-57 average.

Water content of the snowpack usually reaches 75 percent of the year's total by February 1st. This year only 30 percent of an average year's total has been measured by current snow surveys.

SOIL-MOISTURE

Soil moisture in the Basin has improved at higher elevations under the snowpack. The lack of precipitation coupled with above normal temperatures has caused a slight loss of soil moisture in lower valleys not covered by snow.

Soil moisture in Harney Basin is now 58 percent capacity for the top 3 to 4 feet of soil with most of this moisture concentrated in the upper one to two feet. Due to an error in computation, soil moisture was reported as 71 percent in last month's report - the correct figure was 53 percent.

STREAMFLOW

Streamflow during the spring and summer irrigation season is expected to be only "fair" in the early season to "poor" in the late season.

The forecast for the Silvies River, April through September, is only 37 percent of the 1943-57 average. This is a little less than last year at this time and reflects the lack of low elevation snow this year. Smaller streams heading in low elevation watersheds should have a "fair" early season but will peak and drop off much earlier than usual.

Report prepared by
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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Catlow Valley	Fair	Poor
Cow Creek	Fair	Poor
Donner und Blitzen River	Fair	Poor
Mill-Coffeepot Creeks	Fair	Poor
Rattlesnake Creek	Fair	Poor
Silver Creek	Fair	Poor
Silvies River	Fair	Poor
Soldier-Prather Creek	Fair	Poor
Trout Creek	Fair	Poor
Whitehorse Creek	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
3960	Donner und Blitzen near Frenchglen	c	April-Sept.	67	
3935	Silvies near Burns	40	April-Sept.	107	37
4065	Trout near Denio	c	April-Sept.	9.2	

AVAILABLE SOIL MOISTURE

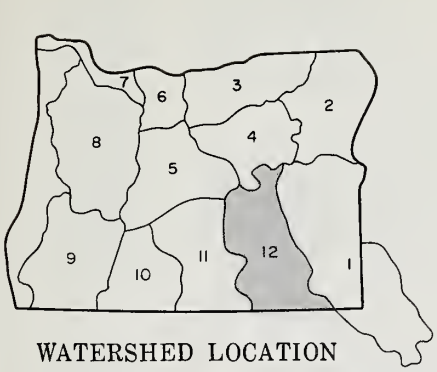
STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Blue Mountain Springs	5900	42	12.0	1-26-61	2.8	--	7.8[j]
Fish Creek	7600	48	9.5	i			
Folly Farm	4450	36	8.3	12-15-60	5.5[h]	5.3[h]	4.6[h]
Silvies	6900	48	10.3	i			
Snow Mountain	6300	48	10.4	i			
Starr Ridge	5150	36	6.1	1-27-61	3.6	5.1	--
Stinking Water	4800	48	11.7	12-15-60	11.0[h]	10.6[h]	11.1
Willow-Bald	5000	24	4.3	12-16-60	1.5	1.0	1.9

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD		
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE	YEARS IN AVERAGE[b]
Blue Mountain Spring	5900	1/26	23	6.6	6.9	11.0	14
Call Meadows[e]	5340	Report	delayed				
Delintment Lake	5600	c					
Denio Creek[e]	6000	1/24	0	0.0	1.4	--	0
Disaster Peak	6500	1/25	24	7.3	--	--	0
Emigrant Butte	5000	c					
Fish Creek[e]	7900	1/25	30	8.4	8.3	--	0
Hart Mountain[e]	6350	1/23	T	T	0.4	--	0
Idlewild Camp	5200	1/27	10	1.9	3.3	4.5	15
Izee Summit	5293	1/27	13	3.4	3.9	6.7	14
Lake Creek	5120	1/27	16	3.2	6.7	--	2
Oregon Canyon[e]	6950	Report	delayed				
Riddle Creek[e] (Buck Pasture)	5700	Report	delayed				
Rock Spring	5100	1/27	8	1.2	3.7	4.7	15
Silvies[e]	6900	1/25	11	3.1	6.0	--	0
Snow Mountain	6300	c					
Starr Ridge	5150	1/27	8	2.2	3.6	4.9	14
Stinking Water	4800	1/27	T	T	3.7	3.5	14
Trout Creek[e]	7800	Report	delayed				
"V" Lake[e]	6600	1/24	12	3.4	2.3	--	0

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (h) Partly estimated. (i) No Fall measurement. (j) Nearest current data.

HARNEY BASIN WATERSHEDS



WATERSHED LOCATION

10 0 10 20 30
SCALE IN MILES

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- Forecast Point
- Snow Course
- Aerial Snow Depth Gage
- Soil Moisture Station

OR-12c

"The Conservation of Water begins with the Snow Survey"

Map and Index to OREGON SNOW COURSES

OWYHEE, MALHEUR WATERSHEDS (1)

Owyhee River

Number	Name		Sec.	Twp.	Rge.	Elev.
[illegible]	Antelope Ridge	(Ida)	32	8S	1W	5900
[illegible]	Barren Valley		26	27S	38E	4200
[illegible]	Battle Creek	(Ida)	10	11S	1E	5700
[illegible]	Bear Creek	(Nev)	31	46N	55E	7800
[illegible]	Big Bend	(Nev)	30	45N	56E	6700
[illegible]	Buckskin, Lower	(Nev)	25	45N	39E	6700
[illegible]	Buckskin, Upper	(Nev)	11	45N	39E	7200
[illegible]	Bull Basin	(Ida)	29	12S	5W	5470
[illegible]	Disaster Peak	(Nev)	8	47N	34E	6500
[illegible]	Fish Creek		4	33S	33E	7900
[illegible]	Fox Creek	(Nev)	33	46N	55E	6800
[illegible]	Fry Canyon	(Nev)	31	43N	54E	6700
[illegible]	Gold Creek	(Nev)	31	45N	56E	6600
[illegible]	Granite Peak	(Nev)	22	44N	39E	7800
[illegible]	*Hyde Pasture	(Ida)	31	8S	2W	5800
[illegible]	Jack Creek, Lower	(Nev)	15	42N	53E	6800
[illegible]	Jack Creek, Upper	(Nev)	9	42N	53E	7250
[illegible]	Jack Peak	(Nev)	28	42N	53E	8420
[illegible]	*Juniper Mtn.	(Ida)	32	11S	4W	6500
[illegible]	Lookout Butte		2	40S	47E	5650
[illegible]	*Mouse Canyon		27	40S	44E	6440
[illegible]	Martin Creek	(Nev)	18	44N	40E	6700
[illegible]	Midas	(Nev)	18	39N	46E	7200
[illegible]	Mud Flat	(Ida)	34	9S	2W	5500
[illegible]	*Nickel Sheep Camp	(Ida)	23	10S	4W	5450
[illegible]	*Oregon Canyon		8	40S	40E	6950
[illegible]	*Quinn Ridge	(Nev)	9	47N	41E	6300
15H6	Rodeo Flat	(Nev)	36	43N	53E	6800
15H3	76 Creek	(Nev)	6	44N	58E	7100
17F1	Shumway Ranch		29	23S	39E	4400
16F3	Silver City	(Ida)	6	5S	3W	6400
18G1	Silvies		35	32S	32½E	6900
16G1	South Mountain No. 2	(Ida)	35	7S	5W	6340
15H9	Taylor Canyon	(Nev)	35	39N	53E	6200
15H8	Trenewan Ranch	(Nev)	9	39N	55E	5700
16G4	*Triangle	(Ida)	25	7S	3W	5150
18G5	*Trout Creek		10	41S	38E	7700
18G7	*"V" Lake		31	35½S	32½E	6600

Malheur River

Number	Name	Sec.	Twp.	Rge.	Elev.
18E14	Barney Creek	16	14S	36E	5950
18E16	Blue Mountain Spring	21	15S	35E	5900
17E3	Bonita	5	16S	40E	4600
18E21	*Bully Creek	10	17S	37E	5300
18F7	*Call Meadows	29	20S	33E	5340
17E2	Clover Creek	36	16S	39E	4100
17F2	*Cottonwood-Indian	10	19S	39E	4320
18E19	Crane Prairie	24	16S	34E	5375
18E20	Eldorado Pass	20	14S	38E	4600
18E26	*Flag Prairie	32	16S	36E	4750
18E18	Lake Creek	10	16S	33½E	5120
18F6	Riddle Creek	21	29S	35E	5800
18F1	Rock Spring	23	18S	32E	5100
17F1	Shumway Ranch	29	23S	39E	4400
18F4	Stinking Water	33	21S	34E	4800
18E22	*Logan Valley	13	16S	33½E	5100

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS (2)

Burnt River

Number	Name	Sec.	Twp.	Rge.	Elev.
18E14	Barney Creek	16	14S	36E	5950
18E13	Blue Mountain Summit	6	12S	36E	5098
17E1	Dooley Mountain	32	11S	40E	5430
18E20	Eldorado Pass	20	14S	38E	4600
18E8	Gold Center	21	9S	36E	5340
18E9	Tipton	34	10S	35½E	5100

Powder River

Number	Name	Sec.	Twp.	Rge.	Elev.
18E1	Anthony Lake	18	7S	37E	7125
18E5	Bourne	33	8S	37E	5800
17E1	Dooley Mountain	32	11S	40E	5430
18E3	Eilertson Meadows	18	8S	38E	5400
18E8	Gold Center	21	9S	36E	5340
18E6	Goodrich Lake	4	9S	38E	6775
18E23	Little Alps	10	7S	37E	6200
18010	Summit Springs	9	6S	37E	6000
17D7	Taylor Green	3	6S	42E	5740

Pine Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
1708	Schneider Meadows	35	6S	45E	5400

Grande Ronde River

Number	Name	Sec.	Twp.	Rge.	Elev.
17D1	Aneroid Lake No. 1	16	4S	45E	7480
17D2	Aneroid Lake No. 2	16	4S	45E	7000
18E1	Anthony Lake	18	7S	37E	7125
17D10	*Bald Mountain	14 & 15	4S	41E	6700
1809	Beaver Reservoir	8	5S	37E	5340
1808	County Line	28	4S	34E	4800
18D6	Lucky Strike	28	3S	32E	5050
1805	Meacham	24 & 25	1S	35E	4300
1706	Moss Spring	28	3S	41E	5850
18D7	Schoolmarm	28	4S	34E	4775
17D7	Taylor Green	3	6S	42E	5740
18D3	Tollgate	32	4N	38E	5070

Imnaha River

Number	Name	Sec.	Twp.	Rge.	Elev.
1701	Aneroid Lake No. 1	16	4S	45E	7480
17D2	Aneroid Lake No. 2	16	4S	45E	7000

UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS (3)

Umatilla River

Number	Name	Sec.	Twp.	Rge.	Elev.
19D2	Arbuckle Mountain	33	4S	29E	5400
18012	Battle Mountain Summit	29	3S	31E	4340
1804	Emigrant Springs	29	1N	35E	3925
18D6	Lucky Strike	28	3S	32E	5050
18D15	Pearson Creek	31	2S	33E	3000
1805	Meacham	24 & 25	1S	35E	4300
1803	Tollgate	32	4N	38E	5070
18013	Walla Walla Diversion	22	6N	38E	2400

Walla Walla River

Number	Name	Sec.	Twp.	Rge.	Elev.
18D3	Tollgate	32	4N	38E	5070

Willow Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
1902	Arbuckle Mountain	33	4S	29E	5400

UPPER JOHN DAY WATERSHEDS (4)

Upper John Day River

Number	Name	Sec.	Twp.	Rge.	Elev.
18E1	Anthony Lake	18	7S	37E	7125
1902	Arbuckle Mountain	33	4S	29E	5400
18012	Battle Mountain Summit	29	3S	31E	4340
19E2	Beech Creek Summit	4	12S	30E	4800
18E16	Blue Mountain Spring	21	15S	35E	5900
18E13	Blue Mountain Summit	6	12S	36E	5098
19E3	Derr	14	13S	23E	5670
18E11	Dixie Springs	28	11S	34E	6650
18E8	Gold Center	21	9S	36E	5340
18E24	*Indian Cr. Butte	5	15S	33E	6550
19E9	Izee Summit	28	16S	29E	5175
18D6	Lucky Strike	28	3S	32E	5050
20E1	Marks Creek	25	12S	19E	4540
20E2	Ochoco Meadows	21	13S	20E	5200
18E7	Olive Lake	14	9S	33½E	6000
1807	Schoolmarm	28	4S	34E	4775
19F1	Snow Mountain	1	19S	26E	6300
19E7	Starr Ridge	20	15S	31E	5150
18E9	Tipton	34	10S	35½E	5100
18E25	Williams Ranch	20	15S	32E	4500

UPPER DESCHUTES, CROOKED WATERSHEDS (5)

Upper Deschutes River

Number	Name	Sec.	Twp.	Rge.	Elev.
21E11	Black Pine Spring	14	16S	9E	4600
21F8	Caldwell Ranch	30	21S	8E	4400
22F3	Cascade Summit	7	23S	6E	4880
21F7	Charlton Lake	23	21S	6E	5750
21F11	Chemult	21	27S	8E	4760
21F14	Fire Road	36	21S	11E	5050
21E6	Hogg Pass	24	13S	7½E	4755
21F4	Hungry Flat	30	18S	11E	4400
21F6	Irish-Taylor	25	20S	6E	5500
21F17	Mowich	29	25S	25S	4700
21F10	New Crescent Lake	11	24S	6E	4800
21F19	New Dutchman Flat #2	21	18S	9E	6400
21F13	Paulina Lake	34	21S	12E	6330
21F15	Paulina Prairie	28	21S	11E	4285
21F3	Tangent	28	18S	10E	5400
21E13	Three Creek Meadows	3	17S	9E	5600
22F2	Waldo Lake	15	21S	6E	5500
22F14	Willamette Pass	33	24S	5½E	5600
22F15	Windigo Pass	20	25S	6E	5800

Crooked River

Number	Name	Sec.	Twp.	Rge.	Elev.
19E3	Derr	14	13S	23E	5670
20E1	Marks Creek	25	12S	19E	4540
20E2	Ochoco Meadows	21	13S	20E	5200
19F1	Snow Mountain	1	19S	26E	6300
19E4	Tamarack	8	15S	25E	4800

HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS (6)

Hood River

Number	Name	Sec.	Twp.	Rge.	Elev.
2106	Brooks Meadows	2	2S	10E	4300
21D25	Cooper Spur	6	2S	10E	3350
21D1	Greenpoint Reservoir	28	2N	9E	3400
21D20	Knebal Springs	31	1S	11E	3850
21D23	Parkdale	6	1S	10E	1940
21D8	Phlox Point	6	3S	9E	5600
2104	Red Hill	21	1S	9E	4400
2109	Still Creek	25	3S	8½E	3700
21D7	Tilly Jane	15	2S	9E	6000
21D21	Ulrich Ranch Junction	28	1S	11E	3350
21D24	Upper Valley	20	1S	10E	2510

Mile Creeks - Mosier Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
21D6	Brooks Meadows	2	2S	10E	4300
21D20	Knebal Springs	31	1S	11E	3850
21021	Ulrich Ranch Junction	28	1S	11E	3350

Lower Deschutes River

Number	Name	Sec.	Twp.	Rge.	Elev.
21D12	Clear Lake	29	4S	9E	3500
21E6	Hogg Pass	24	13S	7½E	4755

LOWER COLUMBIA WATERSHEDS (7)

Sandy River

Number	Name	Sec.	Twp.	Rge.	Elev.
21D8	Phlox Point	6	3S	9E	5600
2109	Still Creek	25	3S	8½E	3700

WILLAMETTE WATERSHEDS (8)

Clackamas River

Number	Name	Sec.	Twp.	Rge.	Elev.
21D15	Big Bottom	25	6S	7E	2118
21D13	Clackamas Lake	35	5S	8½E	3400
21D12	Clear Lake	29	4S	9E	3500
21016	Lake Harriet	4	6S	7E	2045
21014	Peavine Ridge	14 & 15	6S	7E	3500
21D8	Phlox Point	6	3S	9E	5600
2109	Still Creek	25	3S	8½E	3700
21D17	Timothy Lake	26	5S	8E	3295

Santiam River

Number	Name	Sec.	Twp.	Rge.	Elev.
22E1	Detroit (town)	1	10S	5E	1610
22E2	Detroit Dam	7	10S	5E	1580
21E6	Hogg Pass	24	13S	7½E	4755
21E4	Marion Forks	28	11S	7E	2730
22E3	Mill City	29	9S	3E	826
21E5	Santiam Junction	14	13S	7E	3990
21E3	Whitewater Bridge	28	10S	7E	2175

McKenzie River

Number	Name	Sec.	Twp.	Rge.	Elev.
21E8	Dead Horse Grade	13	16S	7E	3800
22E4	Lost Creek Ranch	24	16S	6E	1746
21E7	McKenzie	35	15S	7½E	4800
22E5	McKenzie Bridge	13	16S	5E	1372
22E6	Vida	28	16S	2E	800
21E9	White Branch Slide	15	16S	7E	2800

Middle Fork Willamette River

Number	Name	Sec.	Twp.	Rge.	Elev.
22F3	Cascade Summit	7	23S	6E	4880
21F7	Charlton Lake	23	21S	6E	5750
22F6	McCredie Springs	36	21S	4E	2120
22F8	Meridian Dam	13	19S	1W	750
22F7	Oakridge	16	21S	3E	1310
22F5	Railroad Overpass	27	22S	5E	2750
22F4	Salt Creek Falls	33	22S	6E	4000
22F2	Waldo Lake	15	21S	6E	5500
22F14	Willamette Pass	33	24S	5½E	5600

Coast Fork Willamette River

Number	Name	Sec.	Twp.	Rge.	Elev.
22F9	Champion	12	23S	1E	4500
22F10	Golden Curry Creek	1	23S	1E	3136
22F13	Layng Creek R. S.	31	21S	1E	1200
22F12	Lund Park	22	22S	1E	1740
22F11	Weaver Creek	35	22S	1E	2440

Mary's River

Number	Name	Sec.	Twp.	Rge.	Elev.
23E1	Mary's Peak	21	12S	7W	3620

ROGUE, UMPQUA WATERSHEDS (9)

Rogue River

Number	Name		Sec.	Twp.	Rge.	Elev.
23G4	Althouse		17	41S	7W	4530
22G6	Annie Spring		19	31S	6E	6018
22G21	Big Red Mountain		31	40S	1W	6500
22G13	Billie Creek Divide		30	36S	5E	5300
22F19	Diamond-Crater Summit		34	28S	6E	5800
22G14	Fish Lake		3	37S	4E	4865
22G12	Fourmile Lake		9	36S	5E	6000
23G3	Grayback Peak		9	40S	5W	6000
23H1	Hazel View	(Cal)	9	48N	4E	2500
22G17	Hobart Lake		17	40S	3E	5010
22G26	Howard Prairie		32	38S	4E	4500
22G16	Hyatt Prairie Reservoir		15	39S	3E	4900
22G22	Little Red Mountain		25	40S	2W	6500
23G6	Oregon Caves		16	40S	6W	4000
23G5	Page Mountain		8	41S	7W	4045
22G5	Park Headquarters		8	31S	6E	6450
22H1	Scragg Mountain	(Cal)	9	47N	10W	6200
22G10	Seven Lakes No. 1		3	34S	5E	6800
22G11	Seven Lakes No. 2		26	33S	5E	6200
22G2	Silver Burn		30	30S	4E	3720
22G20	Siskiyou Summit		17	40S	2E	4630
22G9	South Fork Canal		12	33S	3E	3500
22G18	Wagner Butte		1	40S	1W	6900
22G1	Whaleback		3	31S	2E	5140

Umpqua River

Number	Name	Sec.	Twp.	Rge.	Elev.
22F9	Champion	12	23S	1E	4500
22F18	Diamond Lake	29	27S	6E	5315
23G7	Eden Valley Summit	10	32S	10W	2390
22F16	North Umpqua	19	26S	6E	4215
22F20	Quartz Mtn. No. 1	2	28S	1E	4500
22F21	Quartz Mtn. No. 2	22	28S	1E	4000
22F22	Quartz Mtn. No. 3	27	28S	1E	3700
22F23	Red Butte No. 1	36	27S	2W	4560
22F24	Red Butte No. 2	30	27S	1W	4000
22F17	Trap Creek	1	27S	4E	3800
22G1	Whaleback	3	31S	2E	5140
22F15	Windigo Pass	20	25S	6E	5800

KLAMATH WATERSHEDS (10)

Klamath River

Number	Name		Sec.	Twp.	Rge.	Elev.
22G6	Annie Spring		19	31S	6E	6018
22G13	Billie Creek Divide		30	36S	5E	5300
21G5	Ely Mountain		15 & 22	37S	11E	5090
21F11	Chemult		21	27S	8E	4760
22G24	Cold Springs Camp		12	35S	5E	6100
20G12	*Crazyman Flat		9	34S	15E	6100
20H2	*Crowder Flat	(Cal)	30	47N	11E	5200
22F19	Diamond-Crater Summit		34	28S	6E	5800
21F18	Diamond Lake Jct. (97)		1	29S	7E	4600
21G6	*Dog Hollow		1	40S	14E	4900
20G14	*Finley Corrals		11	36S	10E	6000
22G12	Fourmile Lake		9	36S	5E	6000
21G4	Gerber		12	39S	13E	4850
22G16	Hyatt Prairie Reservoir		15	39S	3E	4900
22G26	Howard Prairie		32	38S	4E	4500
22G15	Lake of the Woods		11	37S	5E	4960
22G5	Park Headquarters		8	31S	6E	6450
22G25	Pelican Guard Station		9	36S	6E	4150
20G6	Quartz Mountain		2	38S	16E	5320
22G10	Seven Lakes No. 1		3	34S	5E	6800
22G11	Seven Lakes No. 2		26	33S	5E	6200
20H1	*State Line	(Cal)	21	48N	11E	5750
20G9	Strawberry		4	40S	16E	5600
20G2	Summer Rim		15	33S	16E	7200
21G2	Sun Mountain		22	32S	7½E	5350
20G13	*Sycan Flat		25	31S	14E	5500
21G3	Taylor Butte		16	33S	11E	5100

The California Oregon Power Company's Snow Stations

Number	Name	Sec.	Twp.	Rge.	Elev.
1	Beatty (COPCO)	22	36S	12E	4300
10	Bly 101 Ranch (COPCO)	22	35S	14E	4800
3	Chiloquin (COPCO)	34	34S	7E	4187
4	Crystal (COPCO)	26	34S	6E	4200
5	Fort Klamath (COPCO)	22	33S	7½E	4150
8	Harriman Lodge (COPCO)	3	36S	6E	4200
6	Kirk (COPCO)	1	33S	7E	4533
9	Quartz Mountain (COPCO)	33	37S	16E	5504
12	Yamsey (COPCO)	20	31S	11E	4600

LAKE COUNTY, GOOSE LAKE WATERSHEDS (11)

Goose Lake

Number	Name		Sec.	Twp.	Rge.	Elev.
20G15	*Bear Flat Meadow		27	36S	19E	5900
20G8	Camas Creek		5	39S	21E	5720
20G11	*Cox Flat		16	37S	18E	5750
20G16	*Crane Mountain		13	40S	21E	6020
20H2	*Crowder Flat	(Cal)	30	47N	11E	5200
20H3	*Dismal Swamp	(Cal)	31	48N	16E	7000
20G6	Quartz Mountain		2	38S	16E	5320
20H1	*State Line	(Cal)	21	48N	11E	5750
20G9	Strawberry		4	40S	16E	5600

Abert Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
20015	*Bear Flat Meadow	27	36S	19E	5900
20G11	*Cox Flat	16	37S	18E	5750
20G14	*Finley Corrals	11	36S	16E	6000
20G4	Mill Creek	1	34S	17E	6200
20G6	Quartz Mountain	2	38S	16E	5320
20G10	*Sherman Valley	15	37S	21E	6600

Summer Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
20G2	Summer Rim	15	33S	16E	7200

Silver Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
21F12	Silver Creek	25 & 26	29S	13E	4900
20G13	*Sycan Flat	25	31S	14E	5500

Warner Lake

Number	Name		Sec.	Twp.	Rge.	Elev.
20G8	Camas Creek		5	39S	21E	5720
20G16	*Crane Mountain		13	40S	21E	6020
20H3	*Dismal Swamp	(Cal)	31	48N	22E	7000
19G1	*Hart Mountain		1	36S	25E	6350
20G10	*Sherman Valley		15	37S	21E	6600

Guano Lake

Number	Name		Sec.	Twp.	Rge.	Elev.
19H1	Bald Mountain	(Nev)	17	45N	21E	6720
19G1	*Hart Mountain		1	36S	25E	6350
19H4	*Mosquito Lake	(Nev)	8	45N	19E	6000

HARNEY BASIN WATERSHEDS (12)

Silvies River - Silver Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
18F7	*Call Meadows	29	20S	33E	5340
19F2	Delintment Lake	28	19S	26E	5600
19F3	Emigrant Butte	14	21S	27E	5000
18F3	Idlewild Camp	33	20S	31E	5200
19E9	Izee Summit	28	16S	29E	5293
18F1	Rock Spring	23	18S	32E	5100
19F1	Snow Mountain	1	19S	26E	6300
19E7	Starr Ridge	20	15S	31E	5150
18F4	Stinking Water	33	21S	34E	4800

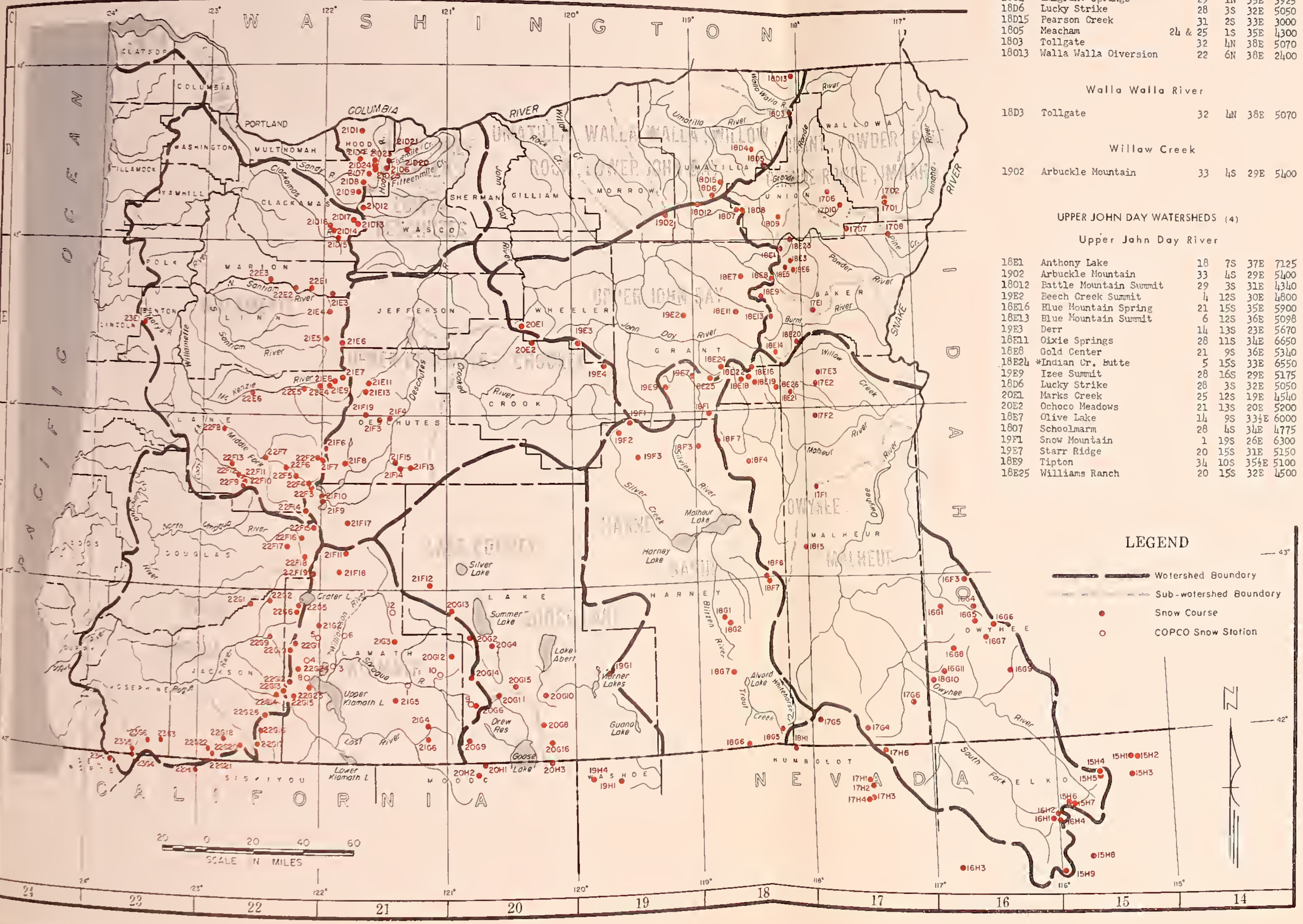
Donner Und Blitzen River

Number	Name	Sec.	Twp.	Rge.	Elev.
18F6	*Buck Pasture (Riddle Cr.)	21	29S	35E	5700
18G2	Fish Creek	4	33S	33E	7650
19G1	*Hart Mountain	1	36S	25E	6350
18F7	*Jenkins Homestead	34	29S	35E	5800
18G1	Silvies	35	32S	32½E	6900
18G7	*"V" Lake	31	35½S	32½E	6600

Trout and Whitehorse Creeks

Number	Name		Sec.	Twp.	Rge.	Elev.
18G6	*Denio Creek		14	41S	34E	6000
18H1	Disaster Peak	(Nev)	8	47N	34E	6500
17G5	*Oregon Canyon		9	40S	40E	7240
18G5	*Trout Creek		10	41S	38E	7800

* AERIAL SNOW DEPTH GAGE



The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE
- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon Agricultural Experiment Station
- Oregon State Engineer and Corps of State Watermasters
- Oregon State Highway Engineers
- Soil Conservation Districts of Oregon

COUNTY
- Douglas County Water Resources Survey

FEDERAL
- Department of Agriculture
  - Cooperative Extension Service
  - Forest Service
  - Soil Conservation Service
- Department of Commerce
  - Weather Bureau
- Department of the Interior
  - Bonneville Power Administration
  - Bureau of Land Management
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
  - National Park Service
- Department of National Defense
  - Corps of Army Engineers

PUBLIC UTILITIES
- California-Pacific Utilities Company
- Pacific Power and Light Company
- Portland General Electric Company
- The California Oregon Power Company

MUNICIPALITIES
- City of Baker
- City of La Grande
- City of The Dalles
- City of Walla Walla

IRRIGATION DISTRICTS
- Associated Ditch Companies
- Central Oregon Irrigation District
- Deschutes County Municipal Improvement District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Jordan Valley Irrigation District
- Lakeview Water Users, Incorporated
- Medford Irrigation District
- North Board of Control - Owyhee Project
- North Unit Irrigation District
- Ochoco Irrigation District
- Rogue River Valley Irrigation District
- South Board of Control - Owyhee Project
- Talent Irrigation District
- Vale-Oregon Irrigation District
- Warmsprings Irrigation District

PRIVATE ORGANIZATIONS
- Amalgamated Sugar Company
- The Crag Rats, Hood River, Oregon

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SOIL CONSERVATION SERVICE
ROSS BLDG., 209 S.W. 5TH AVE.
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"The Conservation of Water begins with the Snow Survey"